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DEVOTED TO

THE INTERESTS OF EDUCATION AND THE TEACHING PROFESSION

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This is a monthly publication devoted to the interests of Sunday School workers and Bible students in general. This Journal is distinguished from all others by its popular and extensive comments on the International Lessons. These comments are drawn from the best German and English writers, and also from ancient Church Fathers and Reformers. The Paraphrase of the Text, drawn from Starke's Synopsis, is a peculiar feature of this Journal. It contains 32 pages, and is sent to any address in the United States or Canada, free of postage, for 56 cents a year. Sample copies sent free.

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We append a few extracts from letters of Sunday-school workers who have used our helps. They are spontaneous and unsolicited expressions of approval.

Selingsgrove, Pa.

I received the March number of the *Teachers' Journal.* I want the whole volume from January. Have you the first volume? If so, in what form? What will you ask for the whole set back to December, 1872. REV. H. ZEGLER,
Prof. Theology in the Missionary Institute.

Lutherville, Md.

I congratulate you on the success of your Sunday-school publications. I must say I prefer your *Journal* to any other that I have seen.
J. R. DIMM,
Principal of Lutherville Female Seminary.

New York Institution for the Instruction of the Deaf and Dumb, April 4, 1873.

I have used the *Teachers' Journal* for more than a year. I consider it the best help for the gaining of a knowledge of the Sabbath-school lessons now published. E. H. CURRIER.

Muhlenburg, Liberia, Africa.

The children in the Mission School must have the Lesson Leaves, and I don't know of any others that suit as well as your *International Comments.*
REV. DAVID A. DAY.

Foreston, Ill.

We are well pleased with the *Journal.* We take the Sunday School Times, published in Philadelphia, but we consider your Explanatory Notes better adapted to the mass of teachers.
REV. W. H. SCHOCH.

Pine Grove Mills.

Since your *Journal* is published I have been taking it. I cannot get along without the aid of the *Journal.* G. W. HOMAN.

Paper Mill, Md.

Since I introduced the *Comments* here the school has been growing in interest. I am trying to introduce them introduce them into our sister schools.
T. T. BENTON.

Mahanoy City, Pa.

I like the *Journal* splendidly; it does me more good than anything I ever studied. J. M. SMITH.

Rev. D. S. Altman, Ottawa, Kan: I am delighted with your *Journal*—can't do without it.

Shamokin, Pa.

The Sunday School at this place after using your *International Comments* for some time concluded to try a question book. In a short time after we received the following note: Please send us 150 *International Comments.* We have tried to get along without them, but find that books do not answer all cases as well as the *Comments.* I myself always favored the use of *Comments* in preference to any other plan. D. Y. GILHAM.

Louisville, O.

Your Lesson Leaves are well liked, more so than any leaves that our school have ever used.
JACKSON BELT.

Leipsic, O.

The Teachers' Journal is the best work of the kind that I have found, and I am glad to see that a number of my people are beginning to take it.
REV. W. H. DOLBEER.

Manchester, Md.

The longer I use it the more I am delighted with it. It is a great help to me in the Infant Department. FANNIE M. CRUMRINE.

New Utrecht, Long Island, N.Y.

I would say your explanations meets my needs as a Sunday-school teacher more fully than the *S. S. J, S. S. T.* and *G. & G. F.*, each of which I have examined. MISS A. C. VAN PELT.

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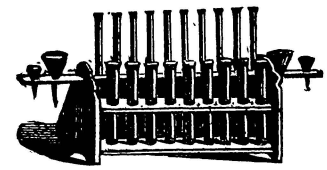

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The Canada School Journal.

VOL. V. TORONTO, JANUARY, 1880. No. 32.

C. P. MASON, B.A., F.C.P.,

(FELLOW OF UNIVERSITY COLLEGE, LONDON).

Mr. Mason was born in 1820, in the neighbourhood of London. After a careful home education, he was placed, in the twelfth year of his age, as a pupil in the Junior School of University College, London, then just opened, with Professors Key and Malden as Head Masters. Having risen to the top of the School in about four years, he proceeded to take his place as a student in the College, entering at once the Senior classes in Latin and Greek. University College, (or as it was then called, in expectation of a special charter, the 'London University'), had a staff of unusually distinguished scholars as its Professors; and it was Mr. Mason's good fortune to pursue his classical studies under the two eminent men named above, and to have his mathematical studies guided successively by Professor White (whose early and accidental death cut short a career of singular promise), Professor De Morgan, and Professor Sylvester. In due course, Mr. Mason carried off the highest prizes in the various classes which he attended, and obtained a scholarship, which enabled him to continue his studies at home, and, subsequently, at the University of Bonn.

As soon as a charter was granted to the University of London, Mr. Mason matriculated, and proceeded, after the necessary interval, to his degree, obtaining an Exhibition at Matriculation, and being bracketed second in Honours at the Degree examinations in Classics.

After an interval, occupied in study and private teaching, Mr. Mason was invited, in the year 1843, to accept the Professorship of Classics and Mathematics in the Lancashire Independent College, which had just been established for the education of candidates for the ministry among the Independents. He discharged the very laborious duties of this post for nearly seven years, when he accepted the invitation of a friend to take the educational direction of a large and important private school at Denmark Hill, near London. He worked in conjunction with the gentlemen referred to for three years, when the school passed entirely under his control, and was the sphere of his uninterrupted labours for twenty years more. By that time, he deemed it prudent to withdraw from the harassing cares involved in the management of a school comprising about 120 pupils, of whom about half were resident. It was in the course of this career as a schoolmaster, that Mr. Mason turned the results of his experience to practical purpose in the gradual elaboration of the English Grammar with which his name is now familiarly associated.

Mr. Mason has also, for several years, been an active member of the London Committee for making arrangements for the conduct of the Local Examination instituted by the University of Oxford, as well as a member of the Council of the College of Preceptors, a chartered institution which conducts courses of instruction for teachers, and grants diplomas on examination to successful candidates, and which also conducts an extensive scheme of examinations for pupils in schools in various parts of the United Kingdom, and carries out the preliminary literary examinations of other chartered bodies, such as the College of Surgeons, the Pharmaceutical Society, &c. The number of candidates at its various examinations has of late exceeded ten thousand per annum. Mr. Mason has for many years acted as one of the examiners in English at these examinations. He also acted at various times as Inspector and Examiner of Schools on behalf of the University of London, under the scheme promulgated by that University.

Besides his English Grammar, Mr. Mason has published various educational works, as aids to the study of English, Latin and Mathematics, and is a not infrequent contributor to the literary journals of the day.

The works which have made Mr. Mason's name so familiar in Canada are his English Grammar (the Complete and School editions), and his Notes on Paradise Lost. His large grammar is authorized for use in the Public and High Schools of Ontario, and the School edition is used in some of the other provinces. His notes on Milton are used in many of the High Schools and Collegiate Institutes of Ontario.

Mr. Mason finds time to contribute occasional articles for the CANADA SCHOOL JOURNAL, and they are always welcomed as clear, definite expositions of the points discussed.

He has been an enthusiastic and indefatigable worker, not merely in the department which he has made specially his own, but in other fields of professional labor. Whenever necessary, he has been an outspoken advocate of the rights of teachers; and he is to-day honoured in his own and other lands as a man who chose to rise to a distinguished position *in* the profession of teaching rather than *on* it.

The Canada School Journal

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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1878.
Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction, Quebec.
Recommended by Chief Superintendent of Education, New Brunswick.
Recommended by Chief Superintendent of Education, Nova Scotia.
Recommended by Chief Superintendent of Education, British Columbia.
Recommended by Chief Superintendent of Education, Manitoba.

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada. The present issue reaches nearly 12,000.

UNIVERSITY CONSOLIDATION IN NEW ZEALAND

Not only in Ontario, but in the far off colony of New Zealand, the important question of University consolidation is receiving a large share of public and official attention. In New Zealand, however, the question discussed is rather the remodelling of the present imperfect system of affiliation to the University than the settlement of the question, or principle of affiliation *de novo*.

At present the New Zealand University exists as an examining body. Affiliated with it is the Otago "University," Canterbury College, and six other smaller so-called "colleges." For many years it had been a moot question, as well as a topic of discussion both in the Legislature and in the public press, whether or not the University should continue to be a merely examining body, or whether it should not rather discharge the teaching functions of a University or University College. At length a royal commission of inquiry was issued directing the commissioners to consider and report upon a much broader question than that of affiliation of colleges. Taking advantage of the issue of such a commission, the Government of the colony wisely enlarged its scope, and directed the commissioners to inquire into a number of questions growing out of the university as well as the public educational system. The extensive and interesting character of this inquiry may be gathered from the fact that the commissioners were required to report upon the following subjects :—

"1. The constitution, organization, operations, resources, expenditure and efficiency of the University of New Zealand, and of the various institutions within the said colony, (1) for the imparting of the higher or University Education, (2) of the secondary or intermediate or grammar-school or high-school education, and (3) of the technical education by means of training schools, schools of art and design, and schools or colleges of practical science.

"2. The mutual relations and mutual influences of the University of New Zealand on the one hand, and of the secondary and technical schools on the other.

"3. The relations which the primary schools sustain, or ought to sustain, to the secondary, technical, and superior institutions.

"4. The best means of bringing secondary and superior education within the reach of the youth of both sexes, by increasing the number of institutions for such education, by the establishment of morning and evening as well as day classes, by means of scholarships to be held by scholars from primary and secondary and technical schools; or by any other means for the purposes hereinbefore mentioned.

"5. The best means of making sufficient and suitable provision for the maintenance, administration and inspection of institutions for education other than primary; and,

"6. The condition, value, and application of endowments made out of public estate, or grants of public money, held under any trusts for the promotion of education, or which may have been obtained or procured, either directly or indirectly, under any grant from the Crown, or under any Act, ordinance, regulation, or other authority whatsoever for the purposes aforesaid; but nothing herein shall require you to make any enquiry respecting any lands or endowments set apart or applied for the purposes of primary education under 'The Education Act, 1877.'"

The Commissioners have presented an elaborate report, extending to nearly 500 pages. They have, however, only reported upon the "University question" and one or two minor matters. The recommendation which they make in regard to the University is to the effect that the University of New Zealand should continue to exist as an examining body, and that there be affiliated with it, under new conditions, the Otago and Canterbury institutions—the designation of which to be changed to that of University Colleges—and that the two colleges at Auckland and Wellington be enlarged to the status of University Colleges and have new buildings erected for them. The other four "colleges" are to occupy the position of grammar or high schools, and, as such, to sustain the relation of feeders to the four University Colleges. The Commissioners then say :—

"In devising a constitution for the governing bodies of the colleges, we have been influenced by three separate considerations of nearly equal importance. 1. In the first place, we have borne in mind that the colleges owe their existence and maintenance to grants of public money or land; and that, on that account, if for no other reason, the Government ought to exercise some direct control over them. 2. In the second place, the professors—whose duties and interests are so inseparably bound up with the prosperity of the colleges, and who must be more intimately acquainted than any other persons can be with the inner working of the colleges, and with the necessities of the students—have an undoubted claim to a voice in the management of these institutions, a claim which is fully recognized in other Universities. 3. And lastly, the graduates, with their experience of the special characteristics of the life of their college, and their personal reasons for desiring to see its efficiency and reputation well maintained, may be expected to exert a beneficial influence if admitted to a share in its government. We therefore recommend that the council of each college be composed of twelve members, as follows: four members to be nominated by the Governor in Council; four members to be elected by the professorial board of each college; four members to be elected by the graduates of the New Zealand University, on the books of the Colleges, as soon as there are twenty such graduates by examination; this last group of members to be appointed by the Governor in Council until there are twenty such candidates."

Two other recommendations of the Commissioners are to the following effect:

"1. That the said colleges shall not in any way be under the jurisdiction or control of the Senate of the New Zealand University further than as regards the regulations for qualifications for the several degrees or other University distinctions; the said colleges being, in all other respects, subjected only to the provisions of the University Act, and the regulations of their respective governing bodies or councils.

"2. That the office of Visitor of the University and the University Colleges, we think, should not be of a merely honorary nature, but should be brought into connection, in some degree, with the general system of education in the colony. Believing that the progress of the University and its colleges will be watched with great interest by the people, we suggest that the Minister of Education should be the Visitor of all these institutions, in order that in his place in Parliament he may be able publicly to give such information respecting them as occasion may require."

The other questions submitted to the Commissioners are barely touched upon, and are to form the subject of a subsequent report.

"PAYMENT BY (OR FOR) RESULTS."

(Old and New Plans.)

In his report on the Training of Teachers in the colony of Victoria, the head of the training institution thus contrasts the old and new systems of "payments by (or rather for) results" in vogue in England. He says:—

"A consideration of the broad phases through which elementary education has passed in England since the introduction of Government aid is suggestive, when we are considering what to look for and how to obtain it At first schools were subsidized on the report of the inspector as to their general condition. There was no individual result examination, but the school was judged by its efficiency as a whole. Under this plan the schools blessed with good teachers were often excellent, but the work of the average school was loose; depth in a few points was sacrificed to superficiality in many; numerous subjects were taken, but few were thoroughly taught; sharp and clever scholars made rapid progress, but the class teaching was indefinite, and the result, as far as the entire elementary school system of the country was concerned, was comparatively poor.

"A complete change was inaugurated after a few years. Grants were now made conditional on the results of the examination of the individual scholars in reading, writing, spelling and arithmetic, and for a while no recognition was made of anything else. This reaction against superficiality and hazy teaching, in favor of thoroughness and definiteness, secured attention to the required subjects and unlimited grinding at them, whilst it drove almost all others out of the school curriculum. Good scholars deteriorated, medium scholars remained stationary, bad schools improved; the best teachers had been attending to the individual scholars before, but all teachers now found substantial gain, though it was lessened by unfortunate drawbacks—a limited syllabus, a tendency to sacrifice the brighter children for the sake of those who were dull, a satisfaction with a very low standard, and the loss of intelectuality in the teaching.

"During the last few years the aim of the English education department has been to maintain definiteness and thoroughness in the three R's and in spelling, to cultivate an improved style of class-teaching, and to introduce the study of higher subjects and an approximation to scientific method in dealing with them, where it can be done profitably. There is therefore an individual examination of all the scholars in reading, writing, spelling and arithmetic, an examination of classes (and practically of class-teaching), in geography, grammar, history and needlework, and an individual examination of advanced scholars in certain special subjects in those schools which deserve and desire it, and grants are made conditionally upon success in these three divisions. This is exclusive of the work of the Science and Art Department, which has its own subjects, its syllabus, its examinations and its scale of payments for results."

—THE Annual Report of the Science and Art Department of the Committee of Council on Education gives the following summary of results:—The number of persons who have, during the year 1878, attended the schools and classes of science and art in connection with the Department, are as follows, viz.:—57,230 attending science schools and classes in 1878, as against 55,927 in 1877; and 727,874 receiving instruction in art, showing an increase upon the previous year of 117,254, or more than 19 per cent. At the Royal School of Mines, there are 36 regular and 189 occasional students; at the Royal College of Chemistry, 303 students; at the Metallurgical Laboratory, 74. At the Royal College of Science for Ireland, there were 22 associate or regular students, and 53 occasional students. The lectures delivered in the Lecture Theatre of the South Kensington Museum was attended by 5,491 persons. The evening lectures to working men at the Royal School of Mines were attended by 1,685 persons, being 458 more than last year; and 169 science teachers attended the special courses of lectures provided for their instruction in the new science schools at South Kensington. The various courses of lectures delivered in connection with the Department at Dublin were attended by about 1,421 persons. The total number of persons, therefore, who received direct instruction as students, or by means of lectures, in connection with the Science and Art Department, in 1878, is 794,547, showing an increase as compared with the number of the previous year of 113,180, or more than 16 per cent. The attendance at the Art and Educational Libraries at South Kensington, and at the National Library of Ireland in 1878, has been 76,064, or an increase of 1,732 over that of last year. The museums and collections under the superintendence of the Departments in London, Dublin, and Edinburgh, were last year visited by 2,329,877 persons, showing a decrease of 218,899 on the number in 1877. The returns received of the number of visitors at the local art and industrial exhibitions, to which objects were contributed from the South Kensington Museum, show an attendance of 513,986. The total number of persons who, during the year 1878, attended the different institutions and exhibi-

tions in connection with the Department. has been upwards of 3,589,487. This total, compared with that of the previous year, presents a decrease of 675,152. The expenditure of the Department during the financial year 1878-79, exclusive of the vote for the Geological Survey, amounted to £282,553 11s. 5d. —*Educational Times.*

—We republish the articles of the Constitution of the International Society for Investigating and Promoting the Science of Teaching—referring to membership. The Society is now organized, and is meeting with much encouragement. Any Canadian educators who desire to join or obtain further information concerning the Society should address Prof. S. P. Robins, Inspector of Protestant Schools, Montreal, or James Hughes, Inspector of Schools, Toronto:

ART. I.—This organization shall be known as the International Society for Investigating and Promoting the Science of Teaching.

ART. II.—Its objects being strictly professional, its membership will be confined to the following classes:

(*a*) Persons employed to instruct teachers in Professional Schools.

(*b*) Superintendents, commissioners, and other officers whose main occupation is the inspection of schools and licensing of teachers.

(*c*) Persons who by authorship, public addresses, or eminent success as educators, have given proof of their interest in the Science of Teaching.

ART. III.—Any person thus eligible may become a member on the following conditions:

(*a*) He shall make application to the Corresponding Secretary, who shall refer the case to the Membership Committee and report the name of the applicant to each member of the Society at least one month before the annual meeting.

(*b*) Upon unanimous report of this Committee his name shall be proposed at the first session of the Annual Meeting of the Society after application, and a three-fourths vote by ballot of the members present shall be required for election.

ART. IV.—The person so elected shall be immediately notified by the Corresponding Secretary, and upon payment of an entrance fee of Twenty Dollars he shall be constituted a member of this Society. Thereafter his dues shall be Ten Dollars a year, to be paid to the Secretary on or before the first day of the Annual Meeting. A delay of three months in paying the annual dues shall forfeit membership, and the name, if again proposed, must be treated as that of a new member.

—THE last half-yearly report of the Committee on School Management of the London (Eng.) School Board, recently issued, states that "the Committee have received and considered during the half year the Government reports on 155 schools, of which 118 are permanent, 36 temporary, and one a half-time school. The average attendance at the permanent schools was 87,274, of the temporary 6,575, and of the half-time school 221, giving a total for all the schools of 93,868. The reports and statistics of examination are given in three categories:—(1) For 137 schools (112 permanent and 25 temporary), with an average attendance of 88,276, the reports on which are for a period of exactly one year; (2) for 17 schools (6 permanent and 11 temporary), with an average attendance of 5,371, one or more departments of which are reported upon for more or less than a year; and (3) for the London street, Bethnal Green, Half-time School, with an average attendance of 221. It is noteworthy that the percentages of passes in each subject are lower, not only than those for the preceding half-year ending March 31st, but also than those for the corresponding half-year of 1878. The average amount of grant earned is also less than for the same period last year." The explanation given for the apparent falling behind, is that the standard required is gradually being raised.

—American teachers sometimes complain about the fact that they do not receive that social recognition to which they are entitled. We may, however, congratulate ourselves on the fact that we are certainly not worse off in this respect than our brethren in England. A Mr. George Holloway, President of a political organization, recently delivered an oration, in which he spoke as follows:—"He had no doubt the leaders of the Liberal party had felt during the last few years that their only chance of maintaining their ascendancy in the borough would be by striking off the register a large number of working men, and so they found that in 1877, at the registration of that year, they sprung a mine upon them by objecting to a large number of respectable working men upon the miserable plea that they were living in houses belonging to their employers, and therefore they were not independent voters—he meant such men as carters, shepherds, cowmen, bailiffs, keepers, coachmen, gardeners, grooms, lock-keepers on the canal, and gate-keepers at crossings on the railways, National School masters—in fact, almost all people of that sort.

—WE are pleased to record the complete and decisive victory of the London (Eng.) School Board over those who opposed its policy at the recent annual election. The "extravagance" plea was the main cry of the opposition, and the people have given an unmistakable verdict in favor of right. The *Daily Telegraph* speaks as follows of the result:—

"Once more the London School Board has won a victory over the opponents of its policy. In summing up the general results of the election, we may say that they are, on the whole, decidedly favorable to the friends of national, compulsory, and unsectarian education. There is no better proof that the policy of the Board is practically irreversible than the fact that so many of the clerical members who were at the last election sent to oppose it have now confessed that, when faced with the circumstances and conditions with which the Board had to deal, they found themselves utterly unable to formulate an alternative policy. This ought to encourage good hopes for the future. The "economic" candidates who have now been elected will, we trust, be powerless for evil. They may talk of economy to their constituents, and pledge themselves to reduce the rate or arrest its increase. But the fact remains that the Elementary Education Act must be carried out in terms of the compulsory by-law. That means that there must be provided in some way or other a school place for every child in London, and every child must be got into a school place. There is, therefore, but one way of securing a large reduction in expenditure, and that is to adopt the bold and uncompromising plan of Mr. Wylie, the 'Radical' and secularist opponent of the Board policy, which is to work the Act on the principle of the Poor Law, cut the higher standards out of the curriculum, and turn the Board schools into refuges for 'gutter children,' for whom cheap instructors of their own class might be provided. Unfortunately for the 'economists,' this policy is just what the Act will not permit anybody to carry out. The 'economists' who have led their constituents to suppose that they will cut down the expendi-

ture of the Board will find that they will have considerable difficulty in fulfilling their pledges."

—It is stated in the *Educational News*, the organ of the Educational Institute of Scotland, that the Edinburgh University Council have agreed to recommend the recognition of the Chair of Education in the curriculum for graduation. This will put the prelections of that Chair at once on a footing of equality with those subjects that are usually regarded as constituting a liberal education; and no one can seriously dispute that they are fully entitled to be so ranked. Mental science, even in faint outline, and its application to the work of the schoolroom; the history of education in connection with the growth of methods; the leading educational systems of the world, and their growth from national institutions and national character—these surely constitute, of themselves, no mean curriculum; and it is no more than justice to all interested in the matter that the work of the Chair of Education should receive the recognition now accorded to it.

—Nearly two hundred female students are in residence at Cambridge. Over fifty of them are studying science. They have a large chemical laboratory and a good scientific library.

Contributions and Correspondence.

THE SCHOOLS OF ANCIENT GREECE AND ROME.

BY J. A. CULHAM, B.A.

Delivered to the Students of Pickering College.

When we read the lives and writings of such men as Demosthenes and Cicero, Æschylus and his brother dramatists; are charmed by the playful humour of Horace, and the graceful finish of Virgil's masterpieces; weep with Moschus in sweetly mournful strains over the death of his beloved Bion; hear Pindar's wild music rolling with the triumphal car of the Olympic victor; and are taught the almost Christian teachings of the school of Socrates, it is interesting, at the same time, to know something of the early life of these men, the home influences which surrounded them, their sports, their schools and their masters. But our knowledge of this branch of antiquity is very scant. The historians of both Greece and Rome seem not to have considered how they would have popularized themselves with modern antiquarians by giving an account of the school systems of their countries; and the poets confined themselves to the gods, to heroes or to love. Plato, indeed, evolved a Utopia, in which he gave education a prominent place, and Aristotle criticised him; but neither gives a detailed account of the schools of his age. The system of entombing copies of the daily journals (which did not exist) in the foundations of their temples was not then known; or we might have read a half column advertisement of the advantages, sanitary and intellectual, of some popular school, the subjects taught, the honors won by former pupils, and the names and qualifications of the masters. As it is, we are indebted for our information to casual remarks of the ancient authors—as, for instance, where Horace speaks of his father bringing him to Rome for an education which the provinces did not afford; and where Demosthenes taunts his opponent Æschines with having held the position of sizar in a school where the former was a pupil.

Leaving aside the question of the age at which education begins—whether in infancy, or when intelligence first shows itself in the eyes and pretty, winning ways of babykind, or only when the compulsory hermitage of the school-room is reached,—I shall avoid all possible omission of what may come within the scope of such a subject as the present, by attempting to give an insight into the life of the youth of ancient Greece and Rome, from the cradle to the University. (They had cradles, at least something corresponding to the modern luxury.) I shall deal separately with the systems followed by the two nations; for though resembling each other to some extent, they differ in details; and I shall deal in details, attempting criticism only where a radical difference warrants it.

To begin with Greece: Greece in her prime, before local jealousies—the bane even of modern communities—had warped patriotism to partyism; before the love of pleasure and the inroads of luxury had made sybarites of its warriors; before the selfishness of demagogues had begun to prey on the venality of its citizens and to cripple the efforts of its true statesmen. Grecian children, then, of this time, both boys and girls, passed their infancy and childhood, to the age of about ten years, in the nursery, under a mother's care, with their rattles and hobby-horses.

Toys are rarely mentioned. Probably they had but few; and probably, too, the great number of slaves owned by the best families, had something to do with the scarcity. The constant attendance of slaves on the persons of the young men, would lead us to suppose that their childhood had been schooled to consider that class as existing for their convenience and pleasure. At the age of five the separate education of the sexes began, or, I should have said, the boys left the nursery and their mother's care for the schoolroom; and the girls remained at home to wait for whatsoever the future might bring. Women, in this age, were held in low estimation. The most despicable class of modern times were then the only ones possessed of education; the rest were despised and neglected. Advocates of women's rights might say, and with some reason too, that the fall of Greece was a just judgment on the nation whose appreciation of the gentler sex was so low. The question, however, is a difficult one to decide, and I shall leave it with a sigh for the barbarism of an age that respected not its women. The boys were placed under a pedagogue, who was not a teacher, as the word would imply now, but a trusty slave, who was the constant attendant of his young master. The change from the freedom of home, from humming tops and blind man's buff; from visits to the market-place on holidays with their nurses, where they watched with delight the ancient representatives of our modern "Punch and Judy," and bought gingerbread from loud-voiced hucksters, the richness of whose dialect made their Billingsgate a by-word; from excursions to the suburbs, among the tall, waving plane trees, where they saw the pure Grecian sky reflected in purer water, the home of the nymphs of wood and stream—the fairies of their nursery tales—the change from all this to the constant companionship of a slave, whose smile never encouraged, whose reprimands and chastisements were ever ready—a slave, his master, his own huge shadow—gave him his first lesson in the leading principle of Grecian education—self-suppression. Greece was placed first; himself, his pleasures, his feelings, last. Poor boy! He must have felt as a modern boy often feels in the companionship of his elders, that he was not appreciated.

We have now our little Greek at school, accompanied thither by the pedagogue. And, by Greek, I mean Athenian; for there alone, of all the cities of Greece, education was not allowed its true value. He is at school, his feet sandalled, and wearing his tunic or smock,

a dress that, like that of the Roman boy, corresponded to the men's dress as knickerbockers to the men's dress of modern times. The schools were not State institutions ; no certificate or diploma was required of the masters, who, in the "Public Schools" of the time, were usually men debarred by mental or physical infirmity from other means of livelihood. There were no State inspectors (except with regard to morals) to cheer and flatter the pupils by a semi-annual address, or urge the teachers to greater exertions. There was no Government appropriation for educational purposes to tempt unscrupulous masters to falsify their returns ; each pupil paid his own small fee. No authorized list of text-books, by its changes, drained the purses of poor parents.

Education was divided into three branches: *grammata*, *mousike*, and *gymnastike*. The first of these comprises more than the meaning of the word implies. Under it were included reading, writing and arithmetic. The manner of learning to read was simple. First the alphabet was mastered; then came the spelling of simple words; and afterwards the structure of sister sentences to *John is a good boy*. Grammar as an art was not known or studied until the founding of the Alexandrine school, about the end of the fourth century B. C.; though the Stoics had previously made the science of grammar a specialty. For the reading-classes, selections were made from the poets, principally Homer; and these selections were made with a view to creating and stimulating a spirit of bravery and a love of heroic deeds. The writings of Homer were supposed to contain all the precepts necessary to give birth to a gentlemanly and truly national feeling. Plato, in his Utopian *Republic*, expurgates from Homer all those parts which display the weaker or gentler side of his heroes' natures, or makes the gods appear too much to resemble mortals—as, for instance, such passages as—

> "I had rather live
> The servile hind for hire, and eat the bread
> Of some man scantily, himself sustained,
> Than sovereign empire hold o'er all the shades;"

Or—

> "Heaven rang with laughter inextinguishable,
> Peal after peal, such pleasure all conceived,
> At sight of Vulcan in his new employ"—

where that deity is represented as limping through the office of cup-bearer to his companions in Olympus. This proposed expurgation was merely a codification of the rule already followed in practice. It is hardly natural to suppose that a Demosthenic roll would invariably be heard in the reading class. There were, no doubt, the brisk boy, whose object was to reach the end of his sentence in the shortest time possible ; the careful boy, who grasped the meaning of his author, and aired his youthful eloquence ; and the inevitable drawler, who would give a sing-song version of Achilles' bravest deeds. But of this we know little ; for no one, at this time, except the relatives of the master, was allowed to enter the school-room under penalty of death, a regulation made to prevent the corruption of the youth.

The reading hour is over, and the writing exercise now begins. And I must ask you to lay aside all ideas of our modern conveniences of steel pens, beautiful ink, finely finished paper, and such like. The Greeks had no running characters, as we have, for expedition in writing. Their school-boys practised *printing* on strips of papyrus, a substance prepared from the inner bark of a water plant. For a pen they used a reed cut into shape, somewhat in the same way as our quill pen ; and for ink, a very durable black substance, which was rendered fluid by rubbing. In the ruins of Herculaneum, ink was recently found that was still fluid, of the consistency of oil, and available for writing.

We can sympathize with the hardships of the little Greek—forming the rigid characters of his language, with a pen too large for his small fingers, on slips of paper that baffled all his care to keep under control. The task is ended, however, and the writing materials stored away. The boys come out of the struggle as veterans from a fight—one, who has been careful, and whom the fates have favored, without a stain ; another, with his hands and clothes smeared with ink, the result of his carelessness ; and another, bearing on his face the marks of a companion's wantonness.

Arithmetic was taught in elementary schools only in so far as it was useful. The course in this science embraced the simple rules, and such practical branches as the computation of interest and the like. The Greek system of notation differed both from the Roman and the Arabic. The first part of the alphabet, with the interpolation of some obsolete letters, was used for the units. For the rest, the remainder of the alphabet, with obsolete letters and dashes, was used.

Such was the curriculum of the Grecian Public Schools. Those patronized by the wealthier classes differed only in having more capable teachers and better accommodation. Private tutors were employed for the instruction of youths in special branches, as oratory and music.

I can recall no case of flogging in the Grecian School-room except in the writings of Aristophanes ; and he does not distinctly mention the fact ; but I cannot imagine boys so very good, (I have a prejudice against boys who never are in mischief,) or masters so long-suffering, that the switch was never used. We have it on record that the modern plan of applying the slipper was not unknown in Greece.

At about the age of thirteen the study of music was begun. We cannot wonder at the importance the study of this art assumed in Greece, when we consider that it solemnized public festivals, and private banquets ; that the gods were worshipped in music and song ; and marriage and birthday feasts were enlivened by the sweet notes of the cithara. The stirrring strains of Pindar, with harp accompaniment, escorted the victor in the great national contests to his home ; the choruses of the dramatists—songs that rank high in Grecian literature in vigor and beauty—were sung by trained bands and criticised by all Greece ; the prophecies of Apollo's oracles were chanted by his priestesses. The favorite instrument was the harp. The flute is more ancient ; but it was little used, except by professionals, for the reason that it distorted the features of the performer, and did not allow the accompaniment of the voice.

While intellectual and physical development went hand in hand at Athens, the other cities of Greece, in a greater or less degree, bear in the training of their youth the mark of barbarism, in encouraging physical development alone; bodily endurance and indifference to suffering; or in allowing both mind and body to become besotted and degenerated through indolence. The gems of literature in all departments left us by the Athenians, their cheerfulness and ready hospitality, compared with the barrenness of other States in literature, their boorishness and absence of sociability, leave no room for further commentary on the advantages of eduation. The object of Sparta was to make her sons warriors. Her people were imbued with that clannish spirit—common to all Greece, though intensified at Sparta—which gained for her the military supremacy of Greece against fearful odds ; but which was one of the chief causes of the subjection of the whole nation to foreign rule. Thebes, the capital of Bœotia, a country whose unproductiveness seems to have paralyzed the mental faculties of its inhabitants, made use of the schools of Athens for the education of the few who had any ambition to emerge from the stupidity into which generations of unlettered ancestors had sunk them.

Let us pass now to the third division of education at Athens, viz., gymnastics. The slight attention that is paid to this art in Canadian schools, especially in the Public Schools, necessitates the

revival of the ancient system of State recognition and support of physical development. We often hear it said that such exercises as boxing, wrestling, and football are rough and dangerous. There is sufficient answer to this in the fact that all Greece, youth and old age, statesmen and warriors, philosophers and poets, frequented the gymnasium for exercise ; and so knit and hardened had their frames become through practice that accidents were very rare. The gymnasia or training schools were at first in an open plain, near a river, which afforded facilities for bathing. Officers were appointed by the State to superintend these ; and trainers were also employed to direct the exercises. If a weak point were discovered in a youth, these trainers prescribed a special course to remedy the defect. They also had special charge of those who intended to enter the public contests at festivals. In later times gymnasia were built in the city, and artificial baths provided. These became the resort of philosophers who found ready audiences among the youths while resting from exercise. It is no wonder that, in a country where athletic training was provided for by legislation, and rendered popular by the honors paid to successful athletes, though the education of the school room might have been almost forgotten, he still in manhood tried conclusions in a friendly way with his fellows, and in old age showed a vigor, only slightly impaired, in hurling the discus or the javelin. A word now about the universities of Greece. The idea of a massive pile of architecture, overgrown with centuries of moss, surrounded by traditions of generation after generation of alumni, and distinguished by the fame of its professions, must not be conceived : these only were found in later times. There were professors, indeed, whose renown Greece did not contain ; but their lecture-room was the street, the baths, the public walks and gardens, and their class, all who wished to hear. Different schools held and taught different doctrines, as the Cynic, Stoic, Academic, and Peripatetic ; each had its own professors and followers ; and naturally there was considerable rivalry between the sects. Then, as now, a slight difference in doctrine was the parent of a new sect, with the bitter jealousy that must exist where men are so unreasonable as to believe that they are right and all others wrong. However, they did good work : Plato, the founder of the Academic School, has made the student grateful by his legacy to literature of treatises in the form of dialogues on almost all branches of mental and moral philosophy, politics and art; Aristotle, the founder of the Peripatetics, in his Ethics, his criticisms, and researches, is the delight of all his readers ; and Socrates, the great founder of mental and moral science, the teacher of Plato and Aristotle, though his writings have not descended to us, furnished, in his life and character, an example to all succeeding ages of true nobility of mind. These and such like men were the every-day associates of the Athenian youth. They pointed out to them the path of duty and happiness, and afforded to old age the comfort of hope ; they gave sound precepts to statesmen, and good legislation to states ; they discussed the laws that govern the universe, and the rules for making an hexameter line. Succeeding ages have reaped the advantages arising from differences of doctrine, in the care bestowed by writers on their productions, in order to avoid the sharp criticisms of their opponents ; and in the acumen displayed by the critics in detecting impalpable flaws.

In passing from Greece to Rome, I must ask you to pardon a slight digression. For the better understanding of the educational systems of the two countries, I shall briefly compare the characters of the two nations, and the aims of education in each. I shall attempt to show the great debt that Rome owes to Greece for the contributions of the latter to her literature, her art, and her social life.

I shall refer chiefly to that part of Rome's history in which she reached the acme of her power, during the last days of the Republic, and the first of the Empire ; for there the two extremes of uncompromising severity, which made the "Roman Father" a proverb and abandoned luxury, that left the task of statesmanship to unprincipled ambition, and the work of war to hireling soldiers, meet. Then we see literature flourishing ; and the love of art, that made the City of the Seven Hills a gallery for the world's wonder, grown strong. Then, the whim of an all-powerful Emperor did not still the eloquence of a Cicero. These two nations, then, were of kindred origin, the descendants, both, of Asiatic emigrants, whose cry was "Westward, ho!"—shoved, as it were, into the peninsulas that they rendered famous. We cannot mark either as being older than the other : the fact that the remains of Greek literature date farther back than Roman, is more the result of circumstances than of priority of existence. The Greeks lived nearer the birthplace of the human race than the Romans. They were a seafaring people in the beginning, and became connected by their colonies and commerce with Persia and their other eastern neighbors; and this connection involved her in the Persian wars. Immediately after these wars sprang up her greatest historians and poets. It was natural that her sons should love to hear and read of the surprising feat of a countless band of warriors, led by the grasping ambition of weak-minded rulers, vanquished by a handful of patriots, who fought for "The ashes of their fathers, and the temples of their gods." Hence, therefore, arose the classical literature of Greece. Her people were united by language, tradition, religion and interest; and not yet had the demon of jealousy sown the dragon's teeth—the seeds of weakness, discord, and political death.

The Romans, on the other hand, were a small setlement on the banks of the Tiber, planted among hostile and barbarous tribes. Theirs was at first a struggle for existence. By policy, by fraud, by force of arms, one after another, the neighboring peoples were joined in alliance with her, or became her subjects. She was looked on as a cancer, spreading its roots over all Italy, which was powerless to stay its ravages. War after war engaged her: the native Italians, the power of the Carthaginians, the barbaric hordes on the north, and the Macedonians, were successively encountered and mastered. The desire for conquest became a mania, and often even a pretext for war was not sought. During the first four centuries of her existence as a nation, there was no time for thought of literature. State records were fortunately kept, which served as a framework for the historians of later times. In the age of Augustus, more wars were waged and larger armies levied than at any previous period of Rome's history; and yet this was the "Golden Age" of Roman literature : but Augustus could command levies from among many populous cities in all Italy, and colonies planted in the foreign countries she had conquered ; whilst, in earlier times, every Roman was necessarily a warrior. The influence of Grecian literature and civilization, moreover, began to be felt before the time of Augustus.

What widely different pictures these two nations present! Greece, gladly emerging from her struggle with Persia, with proud, grateful hearts, turning to the cultivation of the arts of peace, beautifying her temples in thankfulness to her gods, and, by her laws, making Greece a shrine at which her sons in other lands paid their vows of fealty. This period of her history is one of the brightest of all nations to contemplate ; but the contemplation saddens us when we think that it is merely the brightness of a sunset cloud, that only awaits the night to become terrible. Rome, on the other hand, had no wars in her own defence that were not self-incurred ; and yet, having once entered on her work of conquest, she could not retract. Her times of peace were only breathing spaces for a renewal of the struggle. Treacherous, grasping, domineering, her

only redeeming features are, that her sons were brave, and that she became great. "The best aid to success is success;" and if Rome had been vanquished in her early struggles, instead of victor, we should, I am afraid, be sparing of our commiseration and our charity. The early education of the Athenian, as I have said, taught him self-denial and independence. The practical side of life was kept constantly in view; his holidays were confined to the festivals of his country's gods—though in the last days of the independent existence of Greece, the love of pleasure made her the prey of those who best pandered to her degenerate tastes. Greek religious feeling was the parent of the beautiful in Greek art; her solemn tragedies were performed at the feasts of Dionysius; the masterpieces of her painters and sculptors graced the temples of Jupiter and Apollo; her songs were pæans in honor of the Olympian god. The private life of the Romans presents to us the picture of a gay, fickle, ostentatious people. Social reunions were made the occasion for a display of wealth. Their literature is, for the most part, composed of vigorous imitations of Greek writers. They worshipped the sculptures and paintings which they had pillaged from Grecian temples. Their religion amounted to fanaticism when calamity threatened; otherwise they were the slaves of mere form. Bacchus and Venus were the only deities whose rites were universally popular.

(To be continued)

EDUCATION AT THE ANTIPODES.

BY J. GEORGE HODGINS, LL.D., F.R.G.S., DEPUTY MINISTER OF EDUCATION, TORONTO.

NO. II.

Victoria.—This important province of Australia contains an area of 88,200 square miles, and has a population little short of 1,000,000. The latest report received is that of 1877-8. The number of schools established is about 1,700 (including 230 night schools), attended by nearly 250,000 pupils, in the proportion of over 130,000 boys to nearly 120,000 girls. The average attendance of the whole was only about 124,000 (65,000 boys; 58,800 girls), or not quite one-half. The attendance at the night schools has not been found to be very satisfactory. Two-thirds of those who do attend are over 16 years of age; the other third ranges between the ages of 5 and 16 years. The report gives no information in regard to local expenditure for schools as such; but that through the Education Department was $1,500,000 for teachers' salaries; $450,000 for "teachers' results;" $25,000 for teaching singing; $20,500 for instruction in drawing, drill, etc.; $140,000 for "maintenance of schools;" $1,125,000 for buildings, sites, fencing and furniture; $65,000 for architects, inspectors of buildings, draftsmen, etc.; $41,500 for rents; $38,500 for office staff; $36,000 for inspectors, and $36,000 for books and requisites. These are the main items of expenditure. The total is about $3,600,000. The principal of "payments for results," and of "bonuses for pupil teachers," is adopted in apportioning moneys. A system of classification of teachers, and payment in accordance therewith, is also carried out on an improved plan. The classification is (1) Head teachers, (2) First assistants, (3) Second assistants, and (4) Work-mistress. In regard to this matter the Minister of Public Instruction makes the following singular remarks:—"In connection with this subject, the rate of remuneration paid to teachers has naturally come under revision; and, in view of the vast dimensions to which the education vote has now swelled—*dimensions so vast as to threaten to imperil the very existence of the system*—it has been deemed necessary to introduce an amended schedule of payments."

In carrying out the compulsory clauses of the School Act, 24 truant officers are employed. The Minister says:—"In each district a summoning officer is appointed (a member of the police force), whose duties are, at the instance of the truant officer, or of the local "Board of Advice," to serve summonses on defaulting parents and to conduct the prosecutions in court. The total number of summoning officers employed is 226. At the present time the compulsory clause is being carried out in 67 districts by the Board of Advice alone; in 73 districts by the Board of Advice, assisted by the truant officers; in 173 districts by the truant officers, under instructions from the Department. The extra subjects of military drill, singing and drawing are taught in a large number of schools by experts. Hereafter it is proposed that these subjects shall be taught by the regular teachers of the schools. The Minister says:—"The main advantage to be gained by this flaw is, that by this means instruction in these subjects will come to be imparted in schools of every grade, and be no longer confined to those schools in or near large centres of population."

In speaking of elementary science in the schools the Minister says:—"On reviewing the list of extra subjects, I cannot but regard it as a matter for extreme regret that science occupies so insignificant a position in the advanced curriculum of State Schools. I consider it highly desirable that in every school the pupils should be afforded facilities for acquiring the rudiments of at least one of the natural sciences, and a circular to carry out the object is now in course of preparation."

The schemes for the training of teachers are similar to our own, only that teachers are required to spend two years in training. There is, 1st, the "Central Training Institution"—equivalent to our Normal Schools—and, 2nd, the "Associated Schools," or "District Training School" (of which there are 18), equivalent to our County Model Schools. One valuable use to which these District Training Schools is put is worthy of notice. "Their chief business," the Minister says, "lies with the trainees," *i.e.*, teachers in training. "These schools are doing good work. Their chief business lies with the trainees proper, *i.e.*, those who enter for a two years' course of training, during the first of which they are placed in one of these schools for instruction in the prescribed subjects of study, and for a training in the practice of teaching. *This latter function the schools also perform for any inefficient teacher* who may be temporarily transferred to them, with a view to the improvement of his faulty process, by giving him an opportunity of observing approved methods of teaching, and of endeavoring to carry them out under the supervision of an experienced instructor."

The report of the Principal, or Superintendent of the Central Training Institution, discusses the whole question of training teachers, with great ability and practical judgment. Want of space prevents the insertion of several valuable and suggestive remarks.

There is one item in the report which is worthy of note. It is the planting of the school sites with trees. The Minister says: "The work of planting the school sites with trees has not been neglected during the year. Nearly 2000 trees, consisting principally of the blue gums, cypresses, pines and oaks, have been supplied at a cost to the Department of $155, and money grants have been made in addition to the amount of $2,337. Fifty-four sites have thus been planted at a cost of $2,492." This incidental feature of the Victorian school system is well worthy of adoption in Ontario.

THE ART OF THINKING.

The three leading characteristics of healthy thought are *clearness, comprehensiveness* and *quickness;* and although it may tax the powers for a considerable time, it should be the object of the edu-

cator to train an intellectual energy by which the most vivid impression of a subject should be presented to the mind, not merely by itself, but with all its attendant relations and bearings, and this distinct and compendious view reached by the most rapid and immediate perception. On many subjects this rapid insight into the core and the circumference of subjects is impossible, even with profound and accomplished thinkers; but the well-trained mind will be so fitted for intellectual gladiatorship, that most of the sophistries that cross the path of ordinary life will be cloven through at once as with a two-edged sword. There is a twofold method of regarding a subject, which greatly aids the thinking power. The first is the collection of details, and throwing them into generalization—the perpetually looking at the parts in relation to wholes. Thus the mind finds its views enlarged, thus it is emancipated from the village-life view of things to the lofty and universal framework of being. But if the mind is too much accustomed to look at things in their larger relations, then let it be educated by reflecting on the infinitely small and minute parts which make up the whole: instead of tracing from the inner to the outer, it becomes then the duty to trace from the outer to the inner.

We must not only learn, but we must learn how to use our learning. Thought must teach us how to use our mental stores; it is not mere reading or even accumulation—this may lead to congestion of the brain—a swamp in the understanding. The man who desires a fountain in his garden will not obtain it by pouring pailfulls of water there—but he may get a swamp. The mental stores and store-houses should be like other stores. Much, no doubt, gets into the stores which does not reach the exchange and the cottage. But for what are the first but to minister to the intentions of the last. Eating may be pleasant work, but there may be eating without digestion. Yet it is only by the last that we have health. Thought is a worker in three great factories—minds, things and words. It is thought which needs especially to be cultivated.

Another great indispensable preliminary to correct thinking is method. It is, in truth, the very body of the art of thinking. All that logic can do is to methodize our thoughts—it does not profess to give us thoughts. As rhetoric professes to teach us the arrangement of our diction, so as to make words in their application effective, so logic professes to teach us how to arrange our reason and our ideas, so that they may wear the most complete appearance. Method, therefore, we say, should be studied. First arrange your own ideas, and you will be the better able to detect the discordancy of those who may be presented to you, even in some of your great men. Upon being admitted into the chambers of their intellect, we behold the wardrobe and vestments of their minds scattered about in ridiculous disarray; and whenever this is perceived, although you admire the genius, it is certain you lose a large amount of your previous confidence in the teacher. Methodic minds move in a solar pathway, and they leave a track of light after them in the path along which they travel.

At the same time that all this is said, I must say that method itself, system, should be worn gracefully, not obtrusively, in the mind and in the life—within the life, not upon the life—even as an eminent writer says: "Our skeletons are inside our bodies; so, generally, ought our systems to be inside our minds." I hate to see a method worn like a strait waistcoat.

Indeed this art of thinking is what is meant by logic, or the science of inference. But logic has usually been studied merely as an intellectual amusement. As it has usually been studied, it is wholly unfitted for the pugilistic gauntlet of the man of the world. The art of sound thinking and right reasoning will be obtained more readily by an earnest perusal of "Locke on the Understanding," Butler's "Analogy," Lyell's "Geology," Sir John Herschell's "Natural Philosophy," or even from following out the higher order of legal evidence than from all the volumes of mere logic ever written or read.

PAXTON HOOD.

NECESSITY FOR EARNESTNESS AND SELF-DISCIPLINE.

BY MISS LORING, FREDERICTON.

Much harm is often done by persons who are simply using the teaching profession as a stepping-stone to another, and who, instead of having their hearts in their work, only perform it as a mechanical drudgery, which they tolerate because they expect soon to be done with it forever. Now, teaching is drudgery of the worst kind, if it be performed mechanically or unwillingly; but when performed by one who, from a love of the work, has chosen it for his life-long profession, and who day after day sits in judgment on his own work, and who corrects yesterday's mistakes by to-day's clearer light, it is an ennobling employment, one in which there is not a spark of drudgery.

"Onward" should be the teacher's motto, as well for himself as for his pupils; and if it be not onward it will be backward; for if he be not a better teacher this term than he was last, he is a poorer one; and if at the end of the day he sees no errors in his own work, he is not competent to detect errors, or has not interest enough in his work to look for them.

A teacher has no right to carry his personal cares and sorrows into the schoolroom, and go through his work with an abstracted air or a woeful countenance. He belongs in school hours not to himself, but to his pupils; and should drop outside of the schoolroom all selfish thoughts. This is by no means impossible to do; one will never be able to control the minds of others until he brings his own into subjection to his will; and when this is completed, a person need never allow a thought foreign to the subject under consideration to enter his brain.

A teacher should be a cosmopolite; he has no right to have pet subjects on which he spends more time than their importance demands, or which, because he likes them himself, he teaches to the exclusion of those which would tend more to the development of the intellectual powers of his pupils, or which would be of more practical utility to them in after life. He has no right to have a particular scholar, or a particular class, which he wishes to advance. His full interest belongs to the school in general, not to a few individuals, or to a class in particular. If a teacher does not meet with that success to which he looked forward, he must not attribute it to the incorrigibility of his pupils, but search for the cause of failure in himself; in nine cases out of ten he will not have to go any further to find it.

It is the teacher's duty to cultivate a healthy constitution and a cheerful disposition. A sound body is indispensable to a sound mind. It is true that many gigantic intellects have been enclosed in frail bodies; but their weakness was perceptible in all their mental acts. We can read Milton's blindness, Pope's sufferings, and Burns' poverty, in nearly all their productions: so our own physical deformities and external annoyances show themselves in every undertaking, and that which in a great mind was simply a peculiarity, may become in us a monomania.

Our pupils will be just what we make them. If we enter the schoolroom with a listless air, our pupils will be listless and inattentive; if we come in with a careless, languid manner, they will acquire a lagging gait and sleepy movements; if we are sullen, they will be sullen; if violent, they will become violent. But if we are cheerful, animated and industrious, they will be just as quick in forming these habits, for children are imitative creatures.

QUALIFICATIONS OF TEACHERS.

BY DAVID ALLISON, LL.D., SUPERINTENDENT OF EDUCATION, NOVA SCOTIA.

I roughly group the essential qualifications for successful teaching under three heads:—

1. Adequate mental outfit,—an intellect well stocked with knowledge, and with its powers of acquisition and thought duly developed and disciplined.

2. Aptitude, original and acquired, for the specific duties of teaching and government.

3. Upright character, as determining to a conscientious performance of duty and to the exercise of a wholesome exemplary influence on the pupils.

It is clear, at a glance, that these requisites are like the members of the body; one cannot do without the other. Strip a man essaying the functions of teacher of any of these you choose, and you do more than simply modify his usefulness you doom—him to failure. It is necessary for those who aspire to success in our noble profession to comprehend *all* the elements of success. Partial conceptions beget one-sided efforts, and such efforts never accomplish much that is really valuable.

The point that sound and ample scholarship is a *sine qua non*, is one that ought not to need pressing. It *does* need it, nevertheless, and now perhaps as much as ever before. All good things are liable to perversion and abuse, and the sound doctrine that men and women can be trained for the important work of teaching has proved no exception to the rule. The possibility and fact of such training form one of the grandest, as well as the most encouraging, features of modern education, but no amount of training can, except in some shadowy or figurative sense, enable ignorance to play the part, or do the work, of knowledge. It is, nevertheless, no uncommon misconception of normal instruction that it consists in imparting for a price, after the manner of the sophists of the Platonic Dialogues, some trick, or knack, or patented process available to conceal the absence of real knowledge, and thus to remit the necessity for its patient and laborious search. To ascertain and unfold the causes of this misconception is no part of my object. Let it be distinctly understood that all scientific instruction in the art of teaching is based on the assumption that the subject of such instruction himself knows what he proposes to teach. Let nothing be said or done in any quarter, suggesting by near or remote implication, that requirement No. 1 is not strictly fundamental.

The next point of qualification is intimately correlated with the one already considered. Does the teacher possess a thorough acquaintance with the subject which he proposes to teach? is naturally followed by the question:—Does he possess ability to impart instruction regarding it in an effective manner? These both are questions not of mere speculative interest, but of practical force and pertinence. For what is a system worth which undertakes to control the entire educational energies of a country, at least in the spheres of primary and secondary education, which regulates the building of school houses, prescribes the texts which are to be used in the schools, and seizes in its firm legal grasp the property of the people for their support—what, I say, is such a system worth, if it does not provide us with teachers in whom we can have confidence as capable instructors of our children? Now, as respects the question of training teachers for their work, we must recognise in every normally constituted human being some measure of what may be called the natural endowments of a teacher. It is to be expected, in accordance with the varying proportion of human gifts, that some have a larger share of these endowments than others, and that in some they exist in so small a degree as to make it unwise to attempt their development. The arguments which sustain the policy of unfolding and training these rudimentary powers are precisely the arguments which sustain all professional culture. Mankind unite in the possession of certain generic faculties. These faculties are capable of cultivation, and of cultivation to certain precise ends. There is nothing more to be said. If it be not well to subject those powers of mind—and body, too, for that matter—which are to be employed in teaching to special training for that end, one of two conclusions, equally repugnant to right reason, must follow—either teaching is a haphazard procedure without law, or the laws which govern it are in unique contrast to the laws which prevail in all other departments of human effort. My claim then is that the best original aptitudes should be supplemented and strengthened by acquired qualifications. Common sense points out that the proper time for obtaining the latter, *in their grand essential nucleus*, is *prior* to the period of actual school service. Why should the magnificent and invaluable generalizations which form the basis of teaching methods be ignored any more than those on which have been reared the imposing structures of modern physics and astronomy? Why should a man enter a school-room as a palpitating experimenter, with the accumulated certainties of a half century of patient research made ready to his grasp?

Of the third and last qualification,—an earnest and upright character, displayed in constant and ardent devotion to duty, in manifestations of truthfulness and honor, in gentleness toward the timid, in patience toward the dull, in manly firmness toward the froward—of character like this, itself its own commendation to the ingenuous and impressible natures on which it operates, I will only say that this is that indispensable requisite for whose absence nothing can atone. Conjoined with such a character as this, some rare gift and grace of imparting instruction may partially redeem even serious deficiencies of knowledge; or profound erudition, in its turn, may command respect in spite of almost fatal inaptitude for the task of giving others (particularly the young) the benefit of it. Dissevered from this, both learning and skill should count for little. I am not so ignorant of public sentiment as to suppose that there is any great danger of immoral and positively characterless persons being tolerated as teachers in our schools.

We agree to differ as to our theological tenets—as to matters of theoretical truth—and we think none the less of each other for so differing, but we have a common standard of morality and a common interest in its upholding. I speak now of character as exhibited in the relation and specific office of the teacher. My remarks have but indirect reference to depraved moral habitudes which are no worse in the teacher than in anybody else, save so far as they affect greater numbers and more pliant natures with their vitiating influences and examples. In the view I am taking of the subject, the true morality of teaching has its root in a proper conception and practical recognition of the responsibilities assumed. The true teacher is he who determines to do faithfully his duty *as teacher*, and thus his work is done beforehand in the solitude of his own conception and purpose, even as the creations of genius live in the artist's mind before they breathe in marble or glow on canvas.

COMPENSATION AND CAPACITY—It ought to be an established fact that the compensation of teachers must not depend on length of service, but on the capacity of the teacher. There are teachers who have been for years at the work who are creatures of routine, of technicality, utterly without the inspiring quality. Then there are teachers still in the first year of their labor who were born for that labor, and who are nearly as suggestive as adaptable, and as judicious as they will be years hence.—*Ed. Journal of Va.*

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

SOLUTIONS ASKED FOR.

H. F. P. asks for solution of the following: Find the locus of points the difference of whose distances from two straight lines drawn through the same point is constant.

Let AB, AC be the two given straight lines. Draw DE parallel to AB and at a distance from it equal to the given constant difference, D being the point in which DE cuts AC. Bisect the angle EDC by DF. Then DF is the required locus. For perpendiculars from any point in DF on DE, DC are equal, and hence the perpendicular from this point on AB is greater than the perpendicular AC by the required constant excess.

D. J. S. asks for solution of following: There are two blocks on opposite sides of a street, the height of one being 110 ft., and that of the other 120 ft. A ladder is placed somewhere between the two blocks, and it is found to exactly reach the top of one block; it is then turned over (its foot remaining in the same position), and it is found to just reach the top of the other block. It is also found that the ladder reaches exactly across the tops of the blocks. Shew how to determine the length of the ladder and breadth of the street, by aid of Euclid and Arithmetic.

Let x = length of ladder; y = breadth of street. Then y = sum of distances from foot of ladder to blocks

$$= \sqrt{x^2 - (110)^2} + \sqrt{x^2 - (120)^2}.$$

Also, since ladder reaches across tops of blocks, $y^2+(10)^2 = x^2$,

Hence $y = \sqrt{y^2 - 12000} + \sqrt{y^2 - 14300}$.

Squaring this, simplifying, and squaring again, it reduces to a biquadratic of the form of an ordinary quadratic, from which y is obtained, and thence x.

W. S. H. asks is there any known method by which the following problem can be solved by pure geometry: To cut off from a given arc of a circle a part equal to a given straight line not greater than the arc.

The problem is evidently in the same category as the rectification of the circle, *i. e.*, finding a straight line equal to the circumference of a circle or to a part of it; indeed the one is the converse of the other, and it is conceivable that means which would accomplish the solution of the one would effect that of the other. If, however, we could rectify the circle, we could "square the circle." We have therefore to reply to W. S. H. in the negative.

"Teacher" asks for solution of following: Four ladies bought a ball of silk, 5 inches in diameter; how much of the diameter must each wind off to share the silk equally?

If r be the radius of a sphere its volume is $\frac{4}{3}\pi r^3$, where $\pi = 3{\cdot}14159$ . . . .

Let r_4, r_3, r_2, r_1 be the radii of the ball when each begins to unwind, so that $r_4 = 2\frac{1}{2}$.

Then $\frac{4}{3}\pi r_4^3 = 4 \times \frac{4}{3}\pi r_1^3$, $\frac{4}{3}\pi r_3^3 = 3 \times \frac{4}{3}\pi r_1^3$, $\frac{4}{3}\pi r_2^3 = 2 \times \frac{4}{3}\pi r_1^3$.

$\therefore r_1 = \frac{r_4}{\sqrt[3]{4}} = \frac{5}{2\sqrt[3]{4}}$, giving r_1; thence r_2, r_3 may be obtained. The first winds off $r_4 - r_3$, second $r_3 - r_2$, third $r_2 - r_1$, and fourth has what is left.

"Teacher's" second problem is unintelligible: he must state it again.

C. E. K. asks for solution of following, given on page 106 of H. Smith's Statics: If the beam to which the strings are attached be fixed at one point only, about which it is capable of revolving, and there are only two moveable pulleys, find the position of the point in order that the beam may remain horizontal.

C. E. K's trouble must be with the answer Smith gives. He will see, however, on examination, that Smith supposes there to be no fixed pulley. If there be a fixed pulley, the point must divide the distance between the fixed pulley and the position Smith gives in the ratio of 3 to 2, being farther from the fixed pulley.

J. H., Islington.—You will find the solution of your problem in the July (1879) number of the JOURNAL, 2 on page 155. We do not think it will be well for you to waste your time in trying to obtain a so-called Arithmetical solution.

W. S. Howell, of Sombra, has given the following neat solution of Problem 7, in Arithmetic for First Class, given in September number: Diff. between sp. gr. of gold and mixture = 19 − 7 = 12. Diff. between sp. gr. of mixture and quartz = 7 − 2·6 = 4·4. Hence the proportion of gold to quartz is 4·4 : 12, or 11 : 30. He has also called attention to a misprint in solution to second part of problem 1 of the same paper ($\sqrt{\cdot 001}$ should be $3\sqrt[3]{\cdot 001}$), and has given a solution of this problem.

FOR SOLUTION.

Mr. R. H. Cooper, of Dixon, Ill., sends the following:

1. On a level floor are placed three balls whose diameters are 16, 20 and 23 inches, each touching the other two; and on the top of these is placed a fourth ball 18 inches in diameter. How far is the highest point of this last ball above the floor?

2. A circular army, two miles in diameter, marches due east at the uniform rate of 3 miles an hour. An officer starts from the rear of the army and rides round it at the uniform rate of 7 miles an hour, keeping close to the army all the while. How far will the officer ride in going once round the army?

3. A dog in the circumference of a circular field 40 rods in diameter gives a direct and uniform chase to a rabbit 35 degrees before him. Required the distance run by the dog when the rabbit is caught, the rabbit keeping all the time in the circumference, and their speed being as 51 to 50.

4. There are three circles 20, 40 and 100 feet in diameter respectively. The centres of the two smallest are 240 feet apart, those of the largest 420 feet apart, and those of the largest and smallest 360 feet apart. Required the diameter of a fourth circle which shall be tangent to all the others, being between them.

5. A tub is filled to the brim with 40 gallons of cider, and set under a spout from which water is running at the rate of three gallons per minute. Required the quantity of cider remaining in the tub at the end of 15 minutes, supposing the two fluids to mingle perfectly.

NOTE ON THE BINOMIAL THEOREM.

MR. EDITOR,—Allow me to call your attention to a demonstration of the Binomial Theorem for positive integers, given by Bobillier, which, though very simple and lucid, is not very generally known. It does not involve the subject of Permutations and Combinations, and hence in order to understand the proof the student is not obliged previously to master a number of propositions in the above subject (See Analyst, Vol. I., Page 177). It would therefore seem very desirable that this demonstration should find a place in our text-books, and be taught in our schools.

For the benefit of any of your readers who may not be familiar with the notation employed, I will state that $\lfloor\underline{n}$ (factorial n) is an abbreviated way of writing $1.2.3....n$, that is, the product of the natural numbers from 1 to n inclusive, thus $\lfloor\underline{3} = 1.2.3 = 6$; $\lfloor\underline{4} = 1.2.3.4 = 24$; &c.

The demonstration is as follows:

The three following identities will be evident on inspection, viz.:

$$\frac{(x+a)^1}{\lfloor 1} = \frac{x}{\lfloor 1} + \frac{a}{\lfloor 1}.$$

$$\frac{(x+a)^2}{\lfloor 2} = \frac{x^2}{\lfloor 2} + \frac{x}{\lfloor 1}\cdot\frac{a}{\lfloor 1} + \frac{a^2}{\lfloor 1}.$$

$$\frac{(x+a)^3}{\lfloor 3} = \frac{x^3}{\lfloor 3} + \frac{x^2}{\lfloor 2}\cdot\frac{a}{\lfloor 1} + \frac{x}{\lfloor 1}\cdot\frac{a^2}{\lfloor 2} + \frac{a^3}{\lfloor 3}.$$

It is now proposed to find the expansion of $\frac{(x+a)^n}{\lfloor n}$ when n is any positive integer.

In the above the following laws hold:

(1). The number of terms on the right hand is greater by 1 than the exponent of $x+a$ on the left.

(2). The exponent of x in the first term is the same as the exponent of the power to which $x+a$ is raised, and in each succeeding term the exponent of x is less by unity than that in the preceding term, while the exponents of a follow the same law beginning at the other end of the series.

(3). Each power of x or of a has for denominator the exponent taken factorially.

We shall now prove that these laws hold whatever positive integral value be assigned to n.

Suppose the laws to hold when the exponent is $n-1$, that is, suppose

$$\frac{(x+a)^{n-1}}{\lfloor n-1} = \frac{x^{n-1}}{\lfloor n-1} + \frac{x^{n-2}}{\lfloor n-2}\cdot\frac{a}{\lfloor 1} + \frac{x^{n-3}}{\lfloor n-2}\cdot\frac{a^2}{\lfloor 2} + \ldots\ldots +$$
$$\frac{x^{n-r-1}}{\lfloor n-r-1}\cdot\frac{a^r}{\lfloor r} + \ldots + \frac{a^{n-1}}{\lfloor n-1}.$$

Now multiply this identical equation by the following also identical, member by member, viz.,

$$\frac{x+a}{n} = \frac{x}{n} + \frac{a}{n},$$

and as the result of the multiplication we shall obtain the following:

$$\frac{(x+a)^n}{\lfloor n} = \frac{x^n}{\lfloor n} + \frac{x^{n-1}}{\lfloor n-1}\cdot\frac{a}{\lfloor 1} + \frac{x^{n-2}}{\lfloor n-2}\cdot\frac{a^2}{\lfloor 2} + \ldots\ldots +$$
$$\frac{x^{n-r}}{\lfloor n-r}\cdot\frac{a^r}{\lfloor r} + \ldots\ldots + \frac{a^n}{\lfloor n} \quad (1).$$

Hence if the above laws hold for an exponent $n-1$, they hold for the exponent n, which is greater than the former by unity; but they have been proved to hold for the exponent 3, hence they hold for 4, hence for 5, and so generally, *i.e.*, they are true in the case of any positive integral exponent.

Now multiply both members of (1) by $\lfloor n$, and we obtain

$$(x+a)^n = x^n + nx^{n-1}a + \frac{n(n-1)}{\lfloor 2}x^{n-2}a^2 + \ldots\ldots +$$
$$\frac{\lfloor n}{\lfloor n-r \lfloor r}x^{n-r}a^r + \ldots + a^n, \text{ which is the Binomial Theorem.}$$

G. Shaw, Kemble, Ont.

ON FACTORING TRINOMIALS.

Sir:—I have been accustomed to use in my classes, for some years past, a method of factoring which I have never seen in text-books on Algebra, and which may, therefore, be new to many of your readers.

Let us multiply any two binomials, *e.g.*, $2a+3b$ and $3a-2b$

$$\begin{array}{r} 2a + 3b \\ 3a - 2b \\ \hline 6a^2 + 9ab \\ \quad - 4ab - 6b^2 \\ \hline 6a^2 + 5ab - 6b^2 \end{array}$$

The result is the trinomial $6a^2+5ab-6b^2$, and the problem is to factor this, or obtain from it the original binomials that produced it.

From an inspection of the process of multiplying, it will be seen that *before* addition there are *four* terms which appear as *three*, *after* addition. The first step in the process of factoring is to recover the four terms from the three. The four coefficients of these terms will always form a proportion ($6:9::4:6$) hence the product of the first and fourth equals the product of second and third. Now, in the trinomial the first and fourth terms appear unchanged, while we have the sum of the second and third. By multiplying 6 by -6, we have, therefore, the product of two quantities, of which 5 is the sum; hence, we have only to ask: What two numbers multiplied together will give -36, and added together will give 5? It is evident that 9 and -4 are the only two numbers, hence, instead of the middle term of the trinomial $5ab$, we insert $9ab-4ab$, making altogether

$$6a^2+9ab-4ab-6b^2.$$

Factoring we have

$$3a(2a+3b)-2b(2a+3b)$$
or $$(3a-2b)(2a+3b).$$

Again, take the trinomial

$$4a^2-7ax-15x^2.$$

Multiplying 4 by -15 gives -60; we have then only to ask, what two numbers added together will give -7, and multiplied will give -60. The answer is -12 and 5, hence we have

$$4a^2-12ax+5ax-15x^2,$$
or $$4a(a-3x)+5x(a-3x),$$
or $$(4a+5x)(a-3x) \quad \text{Q. E. F.}$$

This method will solve any trinomial composed of two binomial factors. It consists in simply inserting the terms that originally appeared in the multiplication, but which have disappeared in collecting.

Albert Coldwell.

Horton Collegiate Academy,
Wolfville, N.S., Nov. 1879.

Practical Department.

*** The articles: Primary Lesson in Number, First Steps in Written Language, and The Recitation, in the December Journal, were selected from the Primary Teacher, an excellent monthly published by Mr. T. W. Bicknell, Editor of the New England Journal of Education.

SOME POINTS IN ALGEBRAIC FACTORING.

II.—BY J. A. McLELLAN, M.A., LL.D.

1. To factor expressions which can be reduced to the form $af(x)+bF(x)$. When an expression can be thrown into this form, it is evident that any factor common to a and b, or to $f(x)$ an $F(x)$, will be a factor of the whole expression. The method about to be illustrated will be found useful in factoring expressions in which some letter occurs in only *one* power; for we have merely to group together all the terms involving this letter, and form all the other terms into a second group, and we shall readily discover the factors common to the two groups.

Example 1. Factor $abx^2-(b^2+ac)x+bc$. In this case we see that only *one* power of b occurs, we therefore form into one group

all the terms involving b, and into another group, the remaining terms: this gives

$$-c(ax-b)+abx^2-b^2x, \text{ or}$$
$$-c(ax-b)+bx(ax-b), \text{ and hence we have}$$
$$(ax-b)(bx-c) \text{ for the required factors.}$$

2 Factor $b^2x^2-bcm^2x-bcx+c^2m^2$.

In this example m occurs in only a single power (m^2); we therefore form into one group all the terms involving m^2, and the other terms into a second group, getting

$$-m^2(bcx-c^2)+b^2x^2-bcx, \text{ or}$$
$$-m^2c(bx-c)+bx(bx-c), \text{ and therefore}$$

the given expression $=(bx-c)(bx-m^2c)$.

3. Factor $2x^4-3b^2x^2-2a^2x^2+3a^2b^2$.

We observe that this expression contains but one power (the second) of both a and b, and we may therefore, first form an $a-$group, or a $b-$group, at pleasure. Taking the former course we get

$$-a^2(2x^2-3b^2)+2x^4-3b^2x^2, \text{ or}$$
$$-a^2(2x^2-3b^2)+x^2(2x^2-3b^2), \text{ which gives}$$
$$(2x^2-3b^2)(x^2-a^2). \text{ Or, forming the } b- \text{ group first}$$

we have

$$-b^2(3x^2-3a^2)+2x^4-2a^2x \text{ , or}$$
$$-3b^2(x^2-a^2)+2x^2(x^2-a^2), \text{ which gives}$$
$$(x^2-a^2)(2x^2-3b^2) \text{ as before.}$$

In the above examples we have taken out, in the first step, only the letter which determined the grouping; but after a little practice, the student may *at once* take out of each group all the monomial factors common to the group.

4. Factor $a^2b^2-ab^2x-(a^2+2b^2)x^2+ax^3+2x^4$.

Here b occurs only in the second power, therefore

$$b^2(a^2-ax-2x^2)-x^2(a^2-x-2x^2), \text{ which gives}$$
$$(b^2-x^2)(a^2-ax-2x^2),$$

of which the trinominal can be resolved into $a+x$, $a-2x$; hence the given expression

$$=(b+x)(b-x)(a+x)(a-2x).$$

5. Resolve into factors

$$2x^3y+2bx^4-bx^3y+4abx^2y-x^2y^2+4axy^2-2abxy^2-2ay^3.$$

In this case both a and b occur in but one power, we may therefore commence with the a—group, or with the b—group: With the latter we have

$$bx(2x^3-x^2y+4axy-2ay^2)+y(2x^3-x^2y+4axy-2ay^2),$$

in which it is seen that the bracketed quantity is the same in each group, hence we have $(bx+y)(2x^3-x^2y+4axy-2ay^2)$: Now the quantity in the brackets can be broken up into factors by the method under consideration. Taking together the terms which contain only the first power of a, and proceeding as in former examples, we have

$$2ay(2x-y)+x^2(2x-y), \text{ or}$$
$$(x^2+2ay)(2x-y). \text{ Hence the given expression}$$
$$=(bx+y)(x^2+2ay)(2x-y).$$

Sometimes expressions which do not come directly under the preceding form may be resolved in a somewhat similar way, *i.e.*, by first finding the factors of its several parts.

6. $mnx^2+mny^2-m^2xy-n^2xy$.

Here, taking mx out of the first and third terms we get $mx(nx-my)$; and taking $-ny$ out of the second and fourth terms we get $-ny(-my+nx)$; and hence the factors are $(mx-ny)(nx-my)$.

7. Factor $x^{3m}+x^{2m}-2$.

This can be put in the form $x^{3m}-1+x^{2m}-1$, which plainly has the factor x^m-1; the other factor therefore is

$$x^{2m}+x^m+1+x^m+1=x^{2m}+2x^m+2.$$

Similarly may be factored

$$x^{3m}-4x+3,\ x^4-(a+b)x^3+ab(a+b)x-a^2b^2, \text{ \&c.}$$

(5) A simple principle connected with the Theory of Divisors is of frequent use in factoring; it may be stated as follows:

If a quantity has $x-a$ (*e.g.*) for a factor, it will vanish when $x-a$ vanishes, *i.e.*, when $x=a$. Conversely, if a quantity vanishes when $x-a$ vanishes (*i.e.*, when $x=a$), it has $x-a$ for a factor.

1. Find the factors of

$$(a+b+c)(ab+bc+ca)-(a+b)(b+c)(c+a).$$

1st. Observe that the expression is symmetrical with respect to a, b, c.

2nd. If there be any *monomial* factor a must be one. Putting $a=0$, the expression vanishes. $\therefore$ a is a factor, and therefore, by symmetry, b and c also are factors.

3rd. There can be no other *literal* factor; because the given expression is of but *three* dimensions, and abc is of three dimensions.

4th. But there may be a *numerical* factor, m suppose, so that we must have $(a+b+c)(ab+bc+ca)-(a+b)(b+c)(c+a)=mabc$.

To find m put $a=b=c=1$ in this equation, and we have

$$3\times3-2\times2\times2=m(1\times1\times1), \text{or } m=1,$$

$\therefore$ the given expression $=abc$.

2. Resolve $a^2(b-c)+b^2(c-a)+c^2(a-b)$.

1st. For $a=0$ this does not vanish; $\therefore$ a is not a factor, and by symmetry, neither is b nor c.

2nd. Try a *binomial* factor; this will likely be of the form $b-c$. Put $b-c$ (*i. e.*, $b=c$) in the given expression and there results

$$a^2(c-c)+c^2(c-a)+c^2(a-c), \text{ which} = 0,$$

$\therefore$ $b-c$ is a factor, and by symmetry $c-a$, and $a-b$ are factors. And since the given expression is of only three dimensions, there can be no other *literal* factor; but there may be a numerical factor, m say, so that we must have

$$a^2(b-c)+b^2(c-a)+c^2(a-b)=m(a-b)(b-c)(c-a).$$

To find m give a, b, c in this equation any values which will not reduce either side to zero, let $a=1$, $b=2$, $c=0$, and we find $m=-1$, so that the required factors are $(a-b)(b-c)(a-c)$.

3. Solve the equation

$$(x+a+b)^3-(a+b)^3-(x+b)^3-(x+a)^3+x^3+a^3+b^3=6abc.$$

Here, instead of expanding, &c., we may apply the above principle to *factor the left-hand* member of the equation. We see that it is symmetrical with respect to x, a, and b; that it vanishes for $x=0$, and therefore by symmetry for $a=0$, and $b=0$, so that it must be of the form $mabx$; put $a=b=x=1$, and m is at once found to be 6,

$$\therefore 6abx=6abc, \text{ and } x=c.$$

In a future number of the JOURNAL we shall extend the principle to more difficult examples in factoring, &c.

MISTAKES IN MANNER.

BY JAMES HUGHES, INSPECTOR OF PUBLIC SCHOOLS, TORONTO.

It is a mistake to scold. To do so merely irritates a class at first, and excites their ridicule and contempt afterwards. No person tells the exact truth when he scolds; and it is a bad thing for a teacher to get credit for making unjust accusations, or saying what he does not really mean.

It is a mistake to threaten. Penalties should be learned practically. If a teacher makes threats that a certain punishment shall follow the doing of certain things, he robs himself of one of his highest prerogatives: the power of adjusting punishment to the peculiar circumstances of each individual case. The very making of a threat erects a barrier between the teacher and his class which prevents sympathy between them. It clearly implies that he doubts their honesty of purpose.

It is a mistake to grumble. Pupils may occasionally deserve censure. Their intentional faults should always be corrected and the errors resulting from accident or inexperience should always be clearly and fearlessly pointed out. They will not improve either in lessons or conduct so long as they are not shown to be defective in these respects. Grumbling is, however, quite a different matter. Complaining soon becomes a habit, and when done mechanically it loses its effect. Martin Luther says, "I blame those teachers who make of their school a place of torment and misery, and never cease to blame their pupils instead of instructing them."

It is a mistake to be hasty. He who loses control of himself loses at the same time the power to control others. The man of calm, even temper, who holds his head erect, walks in a dignified manner, looks unembarrassed, and speaks deliberately, rarely has any trouble in managing a school. The confident man is ever cool. "Excitability and haste weaken the teacher's influence; impair the accuracy of his judgment; complicate his administration of discipline; occasion positive injustice; and stimulate and strengthen, both by example and direct collision, the fierce passions of the pupils."

It is a mistake to show lack of animation and enthusiasm. Lifeless teaching does not secure attention or stimulate mental activity. The pupils will insensibly grow like the teacher. The men and women who accomplish great good are those who have energy and enthusiasm. Let the teacher be in earnest; let him show that he believes what he does to be worth doing well. The "unconscious tuition" of good teachers is often the best gift they ever give their pupils.

The teacher must not mistake a noisy, fussy, demonstrative manner for enthusiasm. Enthusiasm is earnestness without undue excitement.

It is a mistake to be cold and formal. No teacher can succeed without the *sympathy* of his class. To secure this, the teacher must be *genial* and *cheerful*, as well as *straightforward*. The sunshine of a teacher's face, and the "song-shine" of his tone and words can penetrate the darkest recesses of a child's nature, and they often develop germs of power and beauty of character, which would have died for lack of nourishment or grown to be but sickly plants in the darkness. The winds of censure, scolding and grumbling, and the snows of the barren hills of formality, and indifference, only serve to make the timid nature of the child shrink and hide. Kindness in word and manner, a genuine interest in the thoughts, feelings and circumstances of a child, and the warmth of an affectionate nature, will bring out the tender buds of sweetness of temper and purity of heart, and make them grow into the most beautiful flowers of a noble character. A genial manner will enable the teacher to deal with the thousand petty annoyances of the school-room, without allowing them to develop into great difficulties.

It is a mistake to assume to be immaculate. The teacher ought to know all that his circumstances will permit in relation to the subjects he has to teach. He ought also to study the subjects related to them, so that he may not have to show his lack of general knowledge too frequently. He is lacking in common sense, however, if he professes to be an encyclopædia. A mere storehouse for knowledge is of little practical value. It is desirable that pupils should have a respect for the teacher's *acquirements*, but it is of much greater consequence that they have a profound veneration for his honesty. Some teachers sacrifice the good opinion of their pupils in a weak attempt to get credit for having more wisdom than they really possess. It would be much more dignified for them to acknowledge a deficiency of knowledge than show a want of candor.

The attempts made by teachers sometimes to conceal their lack of knowledge, are exceedingly ridiculous. A class in charge of a student teacher was reading Moir's poem "To a Dying Infant" in the Provincial Model School, Toronto. The lines—

"Yes, with the quiet dead,
Baby, thy rest shall be;
Oh! many a weary *wight*,
Weary of life and light,
Would fain lie down with thee"—

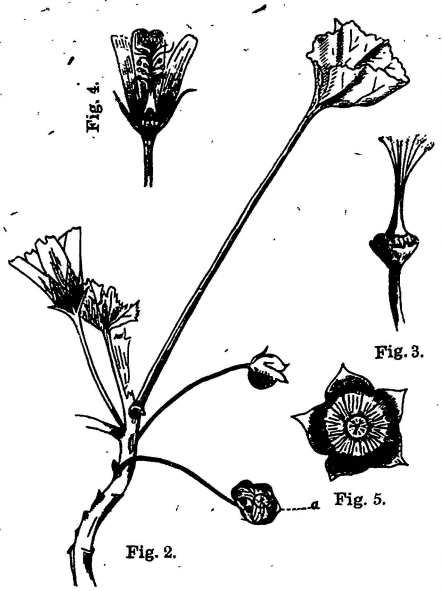
had just been read, when a boy asked the meaning of "wight." The student had evidently labored under what once was a popular delusion, that it was not necessary to prepare a *reading* lesson. It was clear that he did not know the meaning of the word; but with the assumption of the air of one who "knoweth all," and who is just considering "how best to explain it," he said, as he read it over quickly to himself, in order if possible to catch the meaning from the context, "Wight?—ah yes—the word at the end of the line?—yes—I am glad you called my attention to it—that is a misprint boys; it ought to be w-h-i-t-e. You see this little dying infant was a *colored* child, and the poet means that some white people are so tired of living, that they would even be willing to lie down beside a little negro to get rid of their troubles.

BOTANY IN THE SCHOOLS.—IV.

BY H. B. SPOTTON, M.A.

In previous numbers hints have been given as to the manner in which the examination of common plants might be conducted, the most suitable plants to begin with being those of the Crowfoot Family, as neither cohesion nor adhesion of parts is exhibited by these plants as a general thing, and there is consequently less to stand in the young observer's way. As soon as the teacher is satisfied that his pupils have become familiar with the organs of the flower as exemplified in plants like the Buttercup, Marsh-Marigold, Hepatica, Anemone, &c., and that they can readily set down descriptions of such flowers in botanical language, he should present to their notice plants in which some slight departure from previously observed conditions is manifested. For instance, let each pupil be provided with a specimen of the Round-leaved Mallow, a plant which is abundant along every Canadian wayside. The whole of each plant should be taken up. First draw the attention of the class to the form of the root. They will easily see that in this case the root, instead of consisting of fibres, is, in the main, a single stout piece, tapering as it descends (Fig. 1). This difference having been observed, the name *tap-root*, applied to such forms as the present one, should be announced, and the class might be asked to suggest other examples of similar forms which may have come under their notice. The roots of the Carrot, Radish, Dandelion, &c., &c., will be familiar to all. The stem of the Mallow will not require any special notice, but the pupils should be asked to look for a new feature in regard to the leaves. They will not be long in discovering a couple of small leaf-like attachments at the junction of the petiole with the stem (Fig. 2). These *stipules* are of considerable importance in distinguishing plants, and their presence or absence must be carefully noticed. The pupils will now have become acquainted with all the parts that any leaf has, *blade*, *petiole* and *stipules*. The calyx of the flower is the next thing in order. How does this calyx compare with that

Fig 1.



of Buttercup? It seems to be made up of five sepals, but, unlike the Buttercup, these sepals are not separate. For about half their length they adhere (Fig. 2), forming a cup, so that this calyx is *gamosepalous*. The upper halves of the sepals constitute the *calyx-teeth*. Then it may be noticed that this calyx does not fade away when the other parts of the flower disappear; it is therefore said to be *persistent* (Fig. 2 *a*). The petals of the corolla are separate as in the Buttercup, but they are united with the stamens at their base. The stamens present a novel feature—all the filaments cohere, forming a tube (Fig. 3). In all such cases the stamens are *monadelphous*. As the tube of filaments springs from the receptacle, the stamens are of course *hypogynous*, as in the Buttercup. This tube should now be carefully split with the point of a needle, and the stamens removed without injuring the pistil. The latter organ will then be found to consist of *a ring of coherent carpels*, a stout style, and numerous long stigmas (Fig. 4). Let the pupils count the stigmas and the carpels, and observe that the numbers correspond. If a specimen is to be had in which the seeds have ripened, it will be noticed that the carpels have separated from each other (Fig. 5).

To sum up our observations, the Mallow, whilst resembling the Buttercup in having net-veined leaves, petioles distinct from the blade, calyx and corolla of five parts each, yet presents a good many differences, and these differences have been found to be mostly in the *cohesion of parts of the flower*. The differences, in short, are sufficiently marked to form the basis of a new family. The pupils will see at once the resemblance between the Garden Hollyhock and the Mallow, and will understand why these plants are members of the same family.

EXAMINATIONS FOR ADMISSION TO ONTARIO HIGH SCHOOLS, DECEMBER, 1879.

ARITHMETIC.

TIME—THREE HOURS.

Examiner—J. J. TILLEY.

Values.

14 1. A man has 703 ac. 3 roods 22 sq. rods 14¼ sq. yds.; after selling 19 ac. 1 rood 30 sq. rods 2¼ sq. yds.. among how many persons can he divide the remainder so that each person may receive 45 ac. 2 roods 20 sq. rods 25 sq. yards?

14 2. Find the price of digging a cellar 41 ft. 3 in. long, 24 feet wide and 6 feet deep at 20 cents per cubic yard.

14 3. The fore wheel of a waggon is 10½ ft. in circumference, and turns 440 times more than the hind wheel, which is 11⅔ ft. in circumference; find the distance travelled over in feet.

14 4. $\dfrac{3\frac{1}{3}-1\frac{1}{6}\text{ of }\frac{9}{10}+8}{\frac{11}{12}(8\frac{5}{12}+3\frac{5}{8}-\frac{7}{12}+3\frac{3}{8}} \div \dfrac{.05-.005}{.25\div.5}$.

14 5. Find the total cost of the following:—
2745 lbs. of wheat at $1.20 per bush.
867 " oats " 0.35 "
1936 " barley " 0.60 "
1640 " hay " 8.00 per ton.
2675 ft. of lumber at 10.00 per 1000 feet.

14 6. If, when wheat sells at 90 cents per bush., a 4 lb. loaf of bread sells for 10 cents, what should be the price of a 3 lb. loaf when wheat has advanced 45 cents in price?

16 7. At what price must I mark cloth which cost me $2.40 per yard, so that after throwing off ⅕ of the marked price I may sell it at ¼ more than the cost price?

ENGLISH GRAMMAR.

TIME—TWO HOURS.

Examiner—JAMES HUGHES.

Values.

6 1. *Define*—Comparative Degree, Conjunction, Gender, Participle, Relative Pronoun and Subjunctive Mood.

44 2. *Parse*—"The Spaniards employed coastguards to keep off interlopers, the commanders of which were instructed to massacre all their prisoners."

15 3. *Analyze*—"After the banquet, a shower of scented water, scattered from invisible pipes, spread perfume over the apartment."

12 4. Correct the following, and give reasons for making the changes necessary:—
(*a*). I am not sure but that it is right.
(*b*). I will not go, except you promise to come too.
(*c*). He is more cleverer than any one I ever seen.

12 5. Give the past participle of *go*, *have*, *lay* (to place) and *drink*; the feminine of *earl*, *stag* and *miser*; the plural of *medium*, *wharf* and *scarf*; and the possessive plural of *mechanic* and *lady*.

10, *i.e.* 6+2+2 6. (*a*) Give six rules for the use of capital letters.
(*b*) Inflect *which*.
(*c*) Inflect *to see*, in the future passive indicative.

COMPOSITION.

TIME—ONE HOUR AND A QUARTER.

Examiner—J. C. GLASHAN.

Values.

12 1. Make a simple sentence upon each of the following words:—Crocodile, flower, railway, Nelson, truth, temperance, chirp, tremble, conquer, besiege, fierce, candid.

3 2. Combine into a single sentence—A crow had seized a piece of cheese. It flew up into a high tree. It quietly prepared to enjoy its repast.

6, *i.e.*, 2×3 3. Arrange each of the following sentences correctly:—
Wolsey left at his death many buildings which he had begun, in an unfinished state.
It is folly to pretend to protect ourselves against the accidents of life by heaping up treasures, which nothing can guard us against.
A romantic village was situated on the slope, composed of ten or a dozen neat cottages.

6, *i.e.*, 4. Improve the following sentences by avoiding the repetition of related words:—
The abilities, as well as the virtues, of King Alfred justly entitled him to the title of the Great.
Wellington was anxious to be relieved from all anxiety in that quarter.

11, *i.e.*, 8+3 5. Render in good English—
A fox was passing through a vineyard and so he saw some fine bunches of grapes on one of the trees; so he tried to reach one of them, but it hung very high and he could not get it.
Nothing is more effectual as a destroying agency no means so sure as that of time.

18 6. Combine the following sentences so as to form a connected narrative:

Two young bears left their native woods. They came to a bee-hive. The bee-hive was well stored with honey. They were delighted with their discovery. They hastily overturned it. They began to eat voraciously. The bees were not to be deprived of the fruits of their labour with impunity. They flew about the bears. They stung them severely in the ears. They stung them severely in the eyes. The bears endeavoured in vain to repel the attacks of their nimble foes. They were at last forced to retreat to the woods. They were maddened with the pain. They were blinded with rage. Their sufferings at last subsided. They had leisure to reflect upon their conduct. They lamented their folly. They resolved to profit by their sad experience. Pleasure is often bought with pain.

16 7. Tell the following in prose:—

In Grecian annals it remained untold,
But may be read in Eastern legend old,
How, when great Alexander died, he bade
That his two hands uncovered might be laid
Outside the bier, for men therewith to see—
Men who had seen him in his majesty—
That he had gone the common way of all,
And nothing now his own in death might call;
Nor of the treasures of two empires aught
Within those empty hands unto the grave had brought.

DICTATION.

TIME—TWENTY MINUTES.

Examiner—J. C. GLASHAN.

Fourth Book of Reading Lessons, page 129, last paragraph. Value, 22. *Two marks off for each word mis-spelled.*

ENGLISH HISTORY.

TIME—ONE HOUR AND A HALF.

Examiner—S. ARTHUR MARLING, M.A.

Values.

12 1. Tell how the Roman conquest of England was brought about, and what were the principal changes effected by it in England?

12 2. Why is the reign of King John a very important period of English History? Explain fully.

12 3. Give an account of the public life of Oliver Cromwell.

12 4. Tell what is meant by the Revolution, the Restoration, the Reformation, the Parliament.

12 5. Why is the power of the Sovereign now less than it was three centuries ago?

12 6. Tell the principal events of the reign of George III.

GEOGRAPHY.

FOURTH BOOK AND SPELLING.

TIME—TWO HOURS.

Examiner—J. M. BUCHAN, M.A.

Values.

12 1. Tell what you know about the founding of English colonies in North America in the seventeenth century.

2. "They threw themselves at the feet of Columbus with feelings of self-condemnation mingled with reverence. They implored him to pardon their ignorance, incredulity and insolence, which had created him so much unnecessary disquiet, and had so often obstructed the prosecution of his well-concerted plan; and passing, in the warmth of their admiration, from one extreme to another, they now pronounced the man whom they had so lately reviled and threatened to be a person inspired by Heaven with sagacity and fortitude far more than human, in order to accomplish a design so far beyond the ideas and conception of all former ages."—ROBERTSON—*The Discovery of America.*

4½ (i.) In what year was America discovered by Columbus? In whose service was he at the time, and how many vessels did he have with him?

1½ (ii.) What part of America did he first discover?

16½ (iii.) Explain the meaning in which 'implored,' 'incredulity,' 'prosecution,' 'well-concerted,' 'reviled,' 'inspired,' 'Heaven,' 'sagacity,' 'fortitude,' 'conception,' 'ages,' are used in the passage.

3 (iv.) *Created him so much unnecessary disquiet.* To what does this refer? What was 'his well-concerted plan?'

1½ (v.) *From one extreme to another*—What were the two extremes?

1½ (vi.) *More than human*—What is understood after 'human?'

3. "The Red Man came,
The roaming hunter tribes, warlike and fierce,
And the Mound-builders vanished from the earth.
The solitude of centuries untold
Has settled where they dwelt. The prairie-wolf
Hunts in their meadows, and his fresh-dug den
Yawns by my path. The gopher mines the ground
Where stood their swarming cities. All is gone;
All,—save the piles of earth that holds their bones,
The platforms where they worshipped unknown gods,
The barriers which they builded from the soil
To keep the foe at bay, till o'er the walls
The wild beleaguerers broke, and, one by one,
The strongholds of the plain were forced, and heaped
with corpses." —BRYANT—*The Prairies.*

3 (i.) *The solitude of centuries untold.*—Explain the meaning of *untold.* Parse it.

6 (ii.) Explain the meaning in which 'yawn,' 'swarming,' 'beleaguerers,' and 'forced' are used in this passage.

4½ (iii.) What is meant by 'keep the foe at bay' and 'the strongholds of the plain'? Who, according to Bryant, were the foe?

1 (iv.) What is the gopher?

5, *i.e.*, 3+2 (v.) Point out the silent letters in—

"The roaming hunter tribes, warlike and fierce;"

And in—

"The platforms where they worshipped unknown gods."

What final letter in the latter of these lines has a sound different from that which it usually has?

12 4. What is the difference in meaning between

pine,	the noun, and	pine,	the verb?
rue,	"	rue,	"
crew,	"	crew,	"
mean,	"	mean,	"
fare,	"	fare,	"
row,	"	row,	"
rail,	"	rail,	"
hail,	"	hail,	"
ward,	"	ward,	"
blow,	"	blow,	"
mow,	"	mow,	"
peer,	"	peer,	"

GEOGRAPHY.

TIME—ONE HOUR AND A HALF.

Examiner—GEO. W. ROSS.

Values.

5 1. Define meridian, water-shed, bay, frith and zone.

12 2. What and where are Athabaska, Nelson, Chignecto, Restigouche, Gatineau, Temiscaming, St. Hyacinthe, Quinte, Chesapeake, Sacramento, Champlain, and New Orleans.

8 3. Where do you find the following natural productions in greatest abundance: Cotton, copper, coal, coffee, tin, gold, furs and grapes?

11 4. Say you embark at the Isle of Man on a voyage to the mouth of the Volga. Through what waters, and near what capes and islands would you pass?

.20 5. Draw a map of the coast of Asia from Behring's Straits to Cape Comorin, showing all the important physical features with their names neatly printed upon them.

.16 6. Locate the following: Obi, Papua, Zambezi, Tunis, Morea, Cyprus; Venice, Lyons, Copenhagen, Borneo, Cheviot Hills, Crimea, Quito, Port-au-Prince, Trinidad and Loffoden.

PRACTICAL HINTS ON TEACHING.

LONG MULTIPLICATION WORKED WITH A SINGLE LINE OF FIGURES.

To the Editor of the Educational Times.

SIR,—If the following brief method of working Long Multiplication should prove to be new, I hope you may think it worth publishing:—

Suppose we wish to multiply 56248 by 3726. We set the sum in the usual way, thus:—

```
56248
 3726
------
```

We then write out the upper line, *backwards*, on the lower edge of a separate slip of paper, placing a mark over the unit-digit, as a guide to the eye: with this slip we cover the upper line of the given sum, bringing the marked digit over the unit of the lower line, thus:

```
84265
 3726
------
```

We then take the product of the digits which are in the same vertical line (viz., 8, 6); this gives us 48; we write the unit of this (viz., 8) vertically under the scored digit, and "carry" the 4, thus:

```
84265
 3726
------
    8
```

We then shift the slip one place to the left, thus:—

```
 84265
 3726
------
    8
```

We then add together the carried digit and the products of the digits which are in the same vertical lines, and write the result as before. The mental process being, "4+24 = 28, +16 = 44; set down 4 and carry 4."

```
 84265
 3726
------
   48
```

We then shift the slip again, and proceed as before; the mental process being, "4+12 = 16; +8 = 24; +56 = 80; set down 0 and carry 8."

```
 84265
 3726
------
  048
```

We then shift the slip again, and so on; the last step being reached when the sum stands thus, with 5 to carry:

```
 84265
  3726
-------
9580048
```

Hence the mental process of the last step is, "5+15 = 20; set it down." We then remove the slip, and the result appears thus:—

```
   56248
    3726
---------
209580048
```

A similar method will serve for multiplying decimals; all we have to remember is, to bring the marked digit of the slip vertically over whatsoever decimal place we wish to carry the working to. For example, if we wish to multiply together ·63624 and ·25873; and if, in order to have the answer correct to 3 places, we wish to carry the working to 4 places, we set the example thus:—

```
0·63624
0·25873
```

We then write 426360 on a separate slip of paper, and place it so that its marked digit comes vertically over the 4th decimal place in the answer, thus:—

```
42·6 60
0·25873
```

The mental process of the first step will be, "0+48 = 48; +15 = 63; +12 = 75; set down 5 and carry 7."

```
42·6360
0·25873
      5
```

We then shift the slip to the left and proceed as before, the last step being reached when the sum stands thus, with 1 to carry:—

```
42636·0
 0·25875
   635
```

Hence the mental process of the last step is "1+0=1; set it down." We then remove the slip, and the result appears thus:—

```
0·57624
0·25873
·1635
```

Hence the answer, correct to 3 places, will be ·164.

This method seems to me not only to save space and time, but also to avoid the risk of mistakes involved in writing all the intermediate lines of figures required in the old method, as well as the constant risk of losing one's place while carrying the eye obliquely from one figure to another figure several rows above it.

Your obedient servant,
CHARLES L. DODSON,
Senior Student and Mathematical Lecturer of Christ Church, Oxford.

ON SCHOOL METHODS.

In his outlines of a course of lectures on the "Science and Art of Teaching," Professor W. H. Payne, professor elect to the new Chair of Education lately established in the Michigan University, gives the following:

"One grand purpose of primary instruction should be to teach the art of interpreting language and expressing thought."

The type of school work is the acquisition of accumulated knowledge rather than that of original knowledge; the use of books rather than attempts at discovery.

As the typical work of schools is the imparting of accumulated knowledge, the teacher's typical method should be the method of instruction as distinguished from the method of discovery: 1. The method of instruction applies when knowledge has already been acquired and expressed in the form of general laws, rules, principles, or truths. 2. The method of discovery is employed in the acquisition of knowledge, and really consists in those processes of inference and deduction by which general truths are ascertained from the collection and examination of particular facts. [Jevons.] 3. The method of instruction employs language as its chief agent, and has for its chief purpose to put the pupil in possession of desirable portions of knowledge already acquired and systematized. 4. The method of discovery repeats in brief, the process by which knowledge was originally acquired; it is inductive in its procedure, and its purpose is to attain truth by rediscovery. 5. The method of instruction regards accumulated knowledge as so much assured capital that is to be transmitted to a new generation of learners without the cost of rediscovery. The learner is to accept the greater part of this on trust; only a limited part can be verified by personal experience. 6. The method of discovery assumes that the only *real* knowledge is that which is gained *de novo*, by personal experience; and would have each child repeat in brief the history of the race.

The method of discovery has necessary limitations that unfit it for the general purpose of education: 1. If it be applied systematically and thoroughly, it would limit the child's acquisitions to a very few of the most elementary notions. It would require several years' exclusive study by the method of discovery to attain a knowledge of chemistry that could be secured by the ordinary method of instruction within a few weeks. 2. The method of discovery is wholly inapplicable to history, applicable only to a very limited extent to geography, and, in actual practice, only partially applicable to mathematics and natural sciences.

While the typical method is the method of instruction, the method of discovery should be employed for purposes of illustration: 1. The method of discovery, by appealing directly to the senses, excites interest and enlists attention. It is therefore useful in introducing pupils to a new science; and, to all stages, in sustaining interest and attention. 2. The less the skill in interpreting language, and the weaker the power of reflection, the more necessary becomes the method of discovery.

The method of instruction sets out with a definition, a classification, a general law, an abstract truth, or a proposition, and then proceeds by way of explication—division: 1. "In 'Plato's Republic' (one of the noblest examples of method), successive definitions of justice are brought to the test and rejected; and the division preponderates, in the enumeration of the powers of the human soul, and of the classes in a state that answers to them.—*Thompson.* 2. The method of instruction is the classical method, the one employed by the great teachers of all ages for conveying ascertained truth. It is the only royal road to knowledge."

GOING TO SCHOOL.

If you are bound for a college, it will do you good to know, in advance, the best thing the best university can do for you. Probably any bright boy or girl, under private instruction, could obtain

as much valuable information in two years as even Harvard or Vassar are able to lodge in the brain of their superior graduates in four. But the one thing no private schooling, no training in a little, select seminary can do, is the most valuable use of university life.

That college is probably your first introduction to the actual world. It represents to you that variety of talent, that diversity of character, that wide difference in ideas and ideals of life which supplies the condition of all self-knowledge in every successful man or woman. You will there be lifted out of the atmosphere of home, the town school, the companionships of youth, the peculiar notions that make the public opinion of your native place. In short, you will probably realize there, for the first time, that you are at best one among a multitude of promising young people; are at best gifted with one angle of your nature; are destined to spend your life in conflict with others who excel you at every point save at this little angle of your real superiority.

So do not rebel at anything in college which takes down your conceit of yourself, or forces upon you the conviction that in the battle of life only the man who knows himself, and is willing to stand by himself and work out his own salvation, will succeed. Far better than all the knowledge in all the libraries is the discovery that you are but one in a world of people, each with some good outfit of nature, each standing in proportion as he is faithful to that outfit. And if you can learn, in four years, to be grateful especially to all people who reveal you to yourself; who "polish off" your exaggerated opinion of your own merits, and compel you to walk through the strait gate along the narrow way of your own proper ability, your college course will be justified and your graduation diploma will be a roll of honor.

Our own most valuable experience in college life was not a college honor, but a dishonor. We entered, from a country academy, with very decisive opinions of our own concerning the value of certain lines of study in the curriculum. Of course we neglected the special study that seemed to us a waste of time for an aspiring youth. Retribution always waits upon this type of students. Ours, happily, came on an autumn day of the first term. Called to our feet to recite, we were hit just in the line of our neglect, and so unmercifully exposed by our tutor that, in despair, we flung down our book, rushed out of the class-room, and spent the day in tears and self-abasement under the old chestnut-trees of the neighboring grove. But that day's sorrow was the birthday of our mental life. That day, it came to us, as if just spoken out of heaven, that we were not quite competent to lay out a course of college study; that the beginning of all success is loyalty to duty; that instead of being the head, it was possible we were at the tail of our class; that there is but one honorable gate out of college into life,—the gate of hard work. The young tutor who thus became the "means of grace" to a boy he has long forgotten, is now a famous man in a great city; but he will never do a better service to client or constituent than on that autumn day, when he revealed one "bumptious" freshman to himself, and set one mere country youth on the highway to knowledge, reverence, and a consecrated life.—A. D. Mayo, *in New England Journal of Education.*

THINGS IN PIKEVILLE.

"The people do not seem to care what kind of persons are the teachers of their children," said the Principal as we were walking away from the school building. "There is Mrs. Smith Jenkins, who has just been appointed in the primary department——"

"How did she get her place?" I interrupted.

"Why, just like the rest of them. I am clerk of board of trustees, you know. Well, Dr. Smith, her brother, met me one day, and says he, 'There's my sister Mary, she's got to have a place in your school.' I replied, 'Lay it before the trustees.' 'Oh, yes, I know, but they'll ask you, and if you go against her, remember I'll go against you.'

"A petty threat," I replied, "when you had done nothing for or against."

"So I told him, but he only said it the more disagreeably."

"And was she appointed without asking whether she was going to make an efficient teacher?"

"Yes, sir."

"Had she had experience?"

"Not a day."

"Well, how does she get along?"

"She comes in at nine o'clock exactly, on a half-run, and of course her room is a bedlam, children running here and there; some scuffling and all screaming. She seizes a ruler and pounds on her table, and frets and scolds until a little order is secured. Then she begins to hear her classes read. She has eighty pupils, and so she has to fly around. At recess she sits down and knits with the greatest assiduity, as though it was the only happy moment she had in the whole day."

"How do the scholars get along?"

"They don't make any progress except mechanically. She 'hears them read,' as she calls it, but doesn't teach them reading."

"Then you do not think she *teaches* at all—she only 'goes through the motions.'"—*N. Y. School Journal.*

—Lord George Hamilton, addressing the boys of the Church School, at Bolton, one day recently, gave them the sensible advice to try and speak English correctly. The advice to Lancashire lads is doubtless more needful than it is easy to follow; but Lord George was careful to say that he did not think it was wanted exclusively in remote provincial districts. He was bound to say that the House of Commons was no exception to the general rule of careless speaking. The utterances which were dignified by the name of speeches were very slovenly and very slatternly performances. It seems from the report that the boys cheered at this piece of information. He then proceeded to say that there was a very remarkable contrast between the speaking of the young men and that of the old men in the House, and the advantage was entirely in favor of the older generation. Lord George appears to mean by the old men the seniors at present in the House of Commons; but if he has formed his opinion on the speaking of the past in any degree from printed reports of speeches, it is well he should bear in mind that if speaking has deteriorated, reporting has deteriorated in at least an equal degree. Fifty years ago or less the gallery held itself responsible for the grammar at least of the members; to-day no such responsibility appears to be acknowledged, and the result is what we see every morning during the session.—*Pall Mall Gazette.*

—There is not care enough taken on the part of many parents and teachers to be civil to children. Children are taught—or have been and ought to be—to be respectful to their parents and to older persons. But the converse obligation is not often enough insisted on or practised. There is no reason in this. If there be more in older persons to call forth respect, which may not always be true, there is also with them, or ought to be, more capacity for showing respect, more knowledge and judgment, and practice in courtesy. They are thus looked upon with propriety by the children themselves as models in this particular. The pattern is often a poor one. There are teachers in our schools who have yet much to learn in this matter. They will find themselves repaid, they may be sure, in many ways, apart from the public benefit, if they will be civil to their scholars after the most genuine fashion, and with most scrupulous care.

—The pecuniary reward is not all the model teacher receives; there is the future reward,—the abiding esteem of the pupils who have grown up to manhood and womanhood. Laborious industry and patient forbearance should be the motto adopted by the man or woman the moment they enter the portals of their noble profession—teaching. The cross, sour-visaged teacher is an iceberg stranded in a flower-garden, chilling all the beauty and brightness out of the happy flowers, and congealing the music in the very throats of the rejoicing birds. Again, insipid garrulity, unseemly familiarity of the teacher toward the scholars in and out of school, and undignified deportment generally should be avoided. There is a sensible, happy medium. The faithful, intelligent instructor understands this. Teachers have a joyous range; do they all realize it?—*C. T. Preston, of School Com., West Northfield, Mass.*

—In no occupation besides yours is there such pressing need of new thoughts, ideas, and illustrations; in none is there such a tendency to fall into "ruts,"—to do the same thing over and over in the same way, and to say the same thing over and over day after day. A wise teacher reasons as a woman does when she buys

a sewing-machine, or as a farmer does when he buys a mowing machine. He avails himself of the *thoughts and discoveries of others on education;* hence the importance of *educational publications;* they are the cheapest, readiest, and surest means a teacher can employ to keep himself and his class up *in front.* To be a first-class teacher, you must know what the most skilful of your profession would do if in your place.—*N. Y. School Journal.*

—A travelling agent of a St. Louis firm makes affidavit that the following is a literal copy of rules posted on a school-house in the interior of the State : "Each pupel is required to make a bow on entering the School-House of a morning also leaving of Evening the Scool Room. their shal bee no profane language used in school or on the play ground nor there shal be no pin stickin, scraching, no taggin nor no fiting, nor no unesery whispering in scool. No Pupill shal leave the school House without the permission of the Teacher. No unesery moving from seat to seat. No fiting on the road from or to school, nor no nick-naming. Every pupil over eight years is subject to those rules, and the teacher is to make the allowance for all pupils under eight years and enforce the rules according. If any scholar breaks these rules tha shall be punished by switchen."

—A few facts concerning the number of doctors in our country may be of interest to teachers, so we give them. In the United States there is one physician to 600 people ; in Canada, 1 to 1,200 ; in Great Britain, 1 to 1,672 ; in France, 1 to 1,814 ; in Belgium, 1 to 2,048 ; in Austria, 1 to 2,500 ; in Norway, 1 to 3,480 ; and in Italy, 1 to 3,500. This number includes only those who have received diplomas from some regular medical college. It would be interesting if we could present similar figures in relation to the number of licensed teachers in the United States and the other countries of the world. We know the number of schools actually taught each year for at least three months, but we cannot tell how many qualified teachers stand ready to enter the school-room of our own and other countries.—*Barnes' Educational Monthly.*

SCIENCE NOTES.

New Theory of the Nature of Water.—M. Malche, in "Les Mondes," propounds the theory reached after numerous experiments, that water is simply hydrogen plus electricity, or oxygen minus electricity ; or in other words, that normal electrified hydrogen constitutes water, and that normal diselectrified oxygen and water are precisely the same, differing only in degree of electrification.

It is the opinion of Professor A. R. Grote, expressed at the recent meeting of the Entomological Club at Saratoga, that the damage done by the employment of Paris-greeu is greater than that done by the potato-bug. This conclusion Professor Grote has reached after a careful study of the effects of Paris-green agriculturally employed. He has found cases of the poisoning, by this agent, of horses, cattle, sheep, poultry, and even human beings.

New Cure for Sea-sickness.—Dr. Laederick, of France, advocates the following plan for warding off sea-sickness by those predisposed to it :—Apply collodion with a brush in three layers on the epigastric region (over the stomach), and the neighboring parts. I also notice an Algerian journal of medicine offers advice on the same subject by M. Velasco. He says, use injections of 0.005 gr. and 0.02 gr. of morphine, and states that he has personally derived benefit from such treatment.

During an outbreak of scarlatina at Grantham, a town of Lincolnshire, England, nine tent-hospitals were set up in a field just outside the town. These tents were all lined, and had raised wooden floors, which were trenched round. A wooden building was erected to serve for wash-house, kitchen, dispensary, etc. A separate structure was put up for earth-closets. No provision was made for warming the tents, the season being mild. Patients were admitted on June 30th, and the tents were occupied during the eleven weeks following. Sixty-six patients, varying in age from eighteen months to thirty-eight years, were treated ; six of the cases ended fatally.

Science at Oxford (England).—It is a sign of progress to find that the importance of science has been at length recognized at Oxford University, and that the preamble of a statute for instituting a faculty of natural science, and for conferring degrees therein, was adopted recently by Convocation by 57 to 20 votes.

Making Sound-vibrations Visible.—A very ingenious method of recording articulate vibrations by means of photography has just been invented. The apparatus (says *Galignani's Messenger*) consists of a steel mirror capable of oscillations on a diametrical axis, to the back of which is attached a lever connecting it with the centre of a telephone-disk arranged with an ordinary mouthpiece. Whenever the disk is made to vibrate, the mirror oscillates with it, and a beam of sunlight thrown on the reflector from a heliostat describes lines of light on a suitably prepared screen. If the latter be movable at right angles to those lines of light, and carries a collodion film, the oscillation of the light is recorded on the prepared surface as a more or less complex curve having the peculiarity of the sound-wave which caused each particular motion. Another and simpler phoneidoscope is suggested by a writer in *Nature* : it may be made without the aid of any apparatus whatever, by bending the forefinger and thumb of one hand so as to form a circle, and then with the other hand drawing over the aperture a film of soapsuds. By turning the wrist, the angle made with the direction of the light may be readily adjusted ; a motion of the elbow alters the distance from the mouth, and the tension of the film can be exactly regulated by moving the thumb and finger. On singing or speaking to the film when in proper tension, beautiful figures appear, which may be reflected direct from the film on a screen. The experiment is extremely curious and interesting.

Important Discovery in Entomology.—Mr. Gray, of Albany, has been engaged in the study of our diurnal *Lepidoptera* for many years. He has made the discovery, as published in the *Canadian Entomologist*, that our Eastern species of *Liminitis*, four in number, are not distinct. They belong to a single plastic genetic group, of which *arthemis* is the most northern, *proserpina* intermediate between *arthemis* and *ursula*, and the red *disippus* the most southern. He has collected them in vertical altitudes on hills in the Middle States and New England, and has intermediary specimens half bluish and red between the two most strikingly contrasted species of the group *ursula* and *disippus*. This discovery is the most remarkable in the group announced since the recognition of the female form of *diana* by Mr. W. H. Edwards. In general interest it far surpasses that discovery, and we expect will be more generally noticed.

Notes and News.

ONTARIO.

A literary society has been formed in connection with Guelph High School.

The Toronto Public School Board has opened three night schools.

Mr. Alex. McTavish has been appointed mathematical master in the Guelph Agricultural College, in the place of Mr. Nattrass, who has decided to enter the medical profession.

Miss Living, one of the teachers of the Ottawa Collegiate Institute, was presented with an address and testimonial on her resignation.

There are 1,285 pupils in attendance at the Guelph schools.

The Waterloo County Board of Examiners has decided to require all candidates in future to show some capacity for blackboard work.

Sir Leonard Tilley presented the prizes to the successful pupils in Ottawa Public Schools at the close of last session.

The attendance at London Public Schools is 2,837.

There are 882 pupils in attendance at the schools of St. Thomas.

The Stratford School Board have appointed a committee to wait on Messrs. Hay and Ballantyne, M.P.P.'s, requesting them to urge on the Ontario Government the locating of a Normal School in Stratford.

The Public School Board of Listowel has given a decided approval of the question of teaching music in the public schools, by engaging Mr. B. B. Sarvis to instruct the pupils, at a salary of $200 per annum.

In the London East schools the Anderson Gold Medal was won by Sarah Ann Dagh. The Waterman prize was awarded to Emily Dark.

A volunteer company has been formed in Peterborough Collegiate Institute.

Mr. Briggs has resigned his position as Principal of Smith's Falls High School.

Mr. O'Connor, late mathematical master in London Collegiate Institute, has been appointed head master of Harriston High School.

Mr. George Smith, B.A., has been appointed teacher of classics in Woodstock Canadian Institute.

Prof. Macoun has resigned the rectorship of Albert Co lege Grammar School, Belleville, in which he has been succeeded by Prof. Bannister. He will, however, continue to hold a professorship in the college.

The Perth High School Board offer $5 in money and $5 in books to each successful Intermediate candidate.

Mr. Alex. Steele, B.A., head master of the High School in Aylmer, is engaged to take charge of the Orangeville High School. A local paper thus speaks of his success in Aylmer: "The Board here had no thought of letting him go, as no other head master had given such universal satisfaction, but by some means the Orangeville Board has forestalled them. Mr. Steele has become a general favorite with his students, not only for his very superior attainments and his ability to advance them in their studies, but for his sterling integrity and highly moral influence."

Mr. James A. Stewart, M.A., having resigned his position in the Perth Collegiate Institute, the Board passed the following resolution: This board cannot sever their connection with him without bearing testimony to his valuable services as a thorough and painstaking teacher. At the inspections by the High School Inspectors, these gentlemen have always expressed themselves in high terms as to his capacity and aptitude in teaching. Mr. Stewart is a gentleman of high moral character, and this Board feel assured in expressing the belief that wherever his lot may be cast, he will acquit himself with satisfaction to those with whom he may come in contact, and creditably to himself.

The following are the officers of the London Teachers' Association:—President, J. B. Boyle, I.P.S.; Vice-President, A. C. Stewart; Secretary-Treasurer, Miss S. Hanson; Librarian, Alex. otson; Management Committee, Messrs. Wright, Houston, Carn, McKay and Miss Coyne; Library Committee, Messrs. Boyle, Carson, Checkley and Houston, and Miss Coyne; Auditors, D. W. B. McKay and J. T. Colton.

The following is a list of the candidates who passed the professional examinations, December, 1879, at the Toronto and Ottawa Normal Schools, for second-class certificates:—TORONTO—*Males.*—Peter Anderson, John Barr, Wm. L. Biggs, C. H. Britton, Edwin Bowes, S. W. Browne, John Buchanan, R. D. Cameron, Hy. Clay, William F. Cale, L. Davidson, J. McD. Duncan, Duncan A. Dobie, John H. Haun, W. H. Harlton, James Gibson Hume, Hy. Johnston, Alex. Johnston, Andrew Jackson, P. McEachern, J. D. McKay, James M. McKay, C. C. McPhee, Roderick McLennan, C. Mason, John D. Peters, Robert Park, Stanley Phelan, R. G. Potter, C. Sheldon, John Sinclair, Edward Slemmon, Byron Smith, R. Stirrett, J. C. Stoneman, J. H. Thomson, Edward West, D. M. Williams, Henry A. Yenney. *Females*—Amelia A. Bean, Elizabeth Carhill, Anna M. Capron, Carrie Cathcart, Mary Cameron, Nellie Delmage, Bessie Dent, Minnie Emery, Evelina Fanshēr, Sarah Franklin, Emily Garden, Jessie Grey, Christina Howes, Alice Inglis, Augusta Lambier, Minnie E. La Marche, Elizabeth P. McCausland, Sarah M. McKerrall, Louisa McDonald, Isabella Magee, Margaret A. Mills, Margaret M. Mitchell, Carrie Moore, Jessie Moscrip, Frances E. Noble, Euphemia Poole, Mary M. Reid, Lucy O. Seager, Jennie Short, Hattie Skelley, Isabella Smith, Julia Somerville, Jessie Stewart, Jessie M. Thomson, Maria Tomlinson, Mary Turnbull, F. Twohy, H. Twohy, Clara Trusler, Eliza Yates. OTTAWA.—*Males*—Samuel Acheson, T. B. Anderson, O. Avison, Joseph A. Bicknell, W. H. Bingham, W. S. Brown, Fred. P. Burt, Chas. H. Campbell, John Campbell, N. W. Campbell, James P. Caldwell, J. P. Collins, J. Moore Conerty, R. G. Code, A. R. Davis, A. E. Doherty, D. B. Dowling, J. J. Elliott, C. E. Filkins, W. H. Grant, C. R. Gray, Jas. Hart, R. A. Harrington, Finlay Hicks, J. D. Houston, E. B. Howard, R. D. Irvine, Samuel A. Jackson, Wm. Keirstead, D. E. Kennedy, D. P. Killiher, John W. King, George Kimmerly, A. B. Kinsley, Arthur Lang, W. B. Lawson, T. H. Lennox, John C. MacPherson, A. McCalman, Obadiah McCullough, John N. McKendrick, Wm. McLellan, E. W. Maas, S. L. Martin, Ainsley Megraw, H. H. Moyer, Wm. Mill, A. C. Philip, John E. Pickard, I. W. Puffer, K. Robert Row, Thomas Swift, A. L. Vanstone, John Waugh, J. B. Weldon, E. W. Wright. *Females*—Edith E. Beach, Emma Bell, Mary Black, K. A. Brown, Janet Bursnall, Anastasia Cahill, Elizabeth C. Campbell, Sarah Coone, Annie Creighton, Elizabeth Donaldson, E. Dougan, Rosinda Fletcher, L. Gibson, Teresa E. McCarthy, Margaret McDougall, Margaret Mills, May Morrison, Kate Moon, Meda Pake, Hannah M. Paul, Janet Simpson, Ida Jane Stewart, Sarah E. Twamley, Elizabeth E. Turnbull, M. A. Walsh, Elizabeth Wickware.

Wm. O'Connor, M.A., late Mathematical Master in the London Collegiate Institute, has been appointed head master of the new High School at Harriston, at a salary of $1,200. Mr. O'C. is justly regarded as one of our foremost teachers, and the Harriston people have done wisely in securing a first-class man from the start. D. E. Smith, B.A., Toronto University, is to be first assistant.

Wm. Steele, head master of Aylmer High School, has been appointed head master of the Orangeville High School. The Orangeville Trustees have made an excellent choice, and their school is sure of success under Mr. Steele.

NEW BRUNSWICK.

The Terminal Examinations of the University took place as usual about the middle of December, ending with a public oral examination on Thursday, the 18th. On this occasion a number of gentlemen interested in education were present, including senators of the University, members of the Alumni Council, several clergymen, the Principal of the Normal School, with one or two of his fellow-instructors, and others. At the close the students were addressed briefly by the Chief Superintendent of Education and by Bishop Medley (Metropolitan of Canada), and received from the venerable President their send-off for the holidays.

The public terminal exercises of Mount Allison College were held on the 13th December, when essays and orations were delivered by members of the Freshman and Sophomore Classes. The examinations were held previously, and those of the Academies on the 15th Dec., closing with a public exhibition of the Ladies' Academy.

The Public Schools throughout the Province closed for the Christmas vacation, pursuant to regulation, on the 23rd of December, to re-open on the 7th of January, except in the City of St. John, where, owing presumably to peculiar circumstances, the Trustees are at present empowered to give as vacation the whole of the week in which Christmas falls and the next following week. The half-yearly examinations in the St. John Grammar School were held just previous to the holidays, in presence of the President (Canon Brigstock), and several of the Directors of the School, Dr. Bennett, and other gentlemen. The head-master, Mr. H. S. Bridges, A.M., and the assistant master, Mr. McLean, were highly complimented on the good order, discipline, and progress of the school. Four prizes were given in each department for proficiency in Greek, Latin, Geometry, and other branches. The system of granting prizes and merit cards for general school standing, recommended by the Board of Education as preferable to rewards for success in particular branches of study, has not been generally adopted in the schools of St John.

In the Girls' High School, Victoria Buildings, St. John, a very pleasing private entertainment was given by the young ladies, under the supervision of the esteemed Principal, Mrs. Carr. The programme embraced recitations, readings, vocal music, a charade, etc., at the conclusion of which a few kindly remarks were made by some of the Trustees and others, who had in some way gained admission. Besides these there were present by special permission a dozen of the best girls from each of the other departments.

The Executive Committee of the Educational Institute (Provincial) was summoned to meet at Fredericton on the 2nd January, for the purpose of making arrangements for the next meeting of the Institute. We shall be in a position next month to announce the results of their deliberations. As at present constituted, the Committee consists of the following gentlemen, viz.: Dr. Rand, Chief Superintendent of Education; President Jack and Professors Harrison, Bailey and Fletcher, of the University of N.B.; Principal Crocket, of the Provincial Normal School; Mr. G. U. Hay, of the Albert School, Carleton; Mr. J. A. Freeze, Principal of the St. Stephen High School; Mr D. McIntyre, Superintendent of Public Schools in Portland; Mr. R. M. Raymond, principal of the Park Schools, Fredericton; Mr. G. W. Mersereau, of the Superior School, Bathurst; and Mr. John Lawson, of the Superior School, Campbelton; with Mr. H. C. Creed, of the Normal School Faculty, as Secretary-Treasurer.

At the commencement of the present term a rearrangement of the schools in Fredericton was made, whereby each teacher in the

Primary and Advanced Schools now has charge of two grades instead of one, as heretofore. One advantage of this plan is that it removes some of the difficulties of promoting or "grading" pupils only once in the year; and another and still greater is, that it leaves every successive group of scholars under the hand of the same teacher for a period of two years, which must prove more satisfactory than a yearly change. This plan has been pursued in the Model Schools for many years past.

Mr. Geo. Smith, A. B., Principal of the Elgin Grammar School, and President of the Albert County Teachers' Institute, has been appointed Inspector of Schools for the Third District (Westmoreland and Albert), in place of Mr. H. Powell, A.B., resigned.

Robert Marshall, Esq., M.P.P. for the City of St. John, was sworn in a member of the Executive Council a few days ago, and consequently becomes a member of the Board of Education.

There have been several changes in the Boards of School Trustees of St. John, Fredericton, St. Stephen and other towns, which will be noticed in a future number.

His Excellency the Governor-General has been pleased to offer a number of prize medals for competition in the Provincial University and some of the principal schools in the Province, as follows: In the University of N.B., a gold medal and a silver medal; in the Provincial Normal School, two silver medals; in the Provincial Model Schools, a bronze medal; in the Girls' High School, St. John, a silver medal; in the Boys' High (Grammar) School, St. John, a bronze medal; in the Collegiate School, Fredericton, a bronze medal; in the Newcastle High School, a bronze medal. The conditions of award in each school will be announced hereafter, and medals will no doubt be given to other schools, in addition to those named.

Teachers and Trustees will hereafter receive their drafts for the payment of the Provincial allowance and the County fund direct from the Education Office at Fredericton, not through the Inspectors as formerly. This arrangement went into operation in the issue of the drafts for the term ended 30th November last.

QUEBEC.

At the last meeting of the Protestant Committee of the Council of Public Instruction there were present the Right Reverend Bishop Bond, Principal Dawson, LL.D. and F.R.S., R. W. Heneker, Esq., Dr. Cook, the Venerable Archdeacon Leach, LL.D., the Hon. W. W. Lynch, and the Hon. G. Ouimet, Superintendent of Public Instruction. In the absence of the Lord Bishop of Quebec, Mr. Heneker read the report of the sub-committee appointed to consider the reports of Inspectors of Academies and Model Schools. They suggested that the committee should take the schools in order and decide their grants with reference in each case to the Inspectors' reports. They further recommended that, in order to exhibit a clear statement of the kind, quality and degree of instruction given in each school, a digested method of examination should be prepared and sanctioned by the committee for future use, and they thought that this would be facilitated by the adoption of a uniform set of text-books. The committee agreed to receive the report and adopted the recommendation, that in the future reports by Inspectors of Academies and Model Schools the educational matter should be kept distinct from school appliances, &c. The committee further agreed to re-appoint the sub-committee, with the addition of Dr. Leach's name, and to refer thereto the consideration of the forms for exhibiting the state of instruction in each class of the schools inspected, and the adoption of a uniform set of text-books, said sub-committee to meet in Montreal during the Christmas holidays. In regard to medical matriculation and entrance examination on the study of the legal, notarial and other professions, Dr. Dawson stated that a Bill had been introduced during the late session of the Provincial Parliament, but that it had failed to pass, The sub-committee on this subject was re-appointed. The Secretary was instructed to call the notice of colleges or academies to the provisions of the Dominion Government in aid of military drill in such institutions. The Hon. Mr. Lynch stated that he had brought under the notice of the late Government the arrears of Marriage License fees now in the hands of the Dominion Government, but that nothing had as yet been done in regard to this matter. It was resolved to re-appoint the sub-committee on this subject, omitting the name of the Hon. W. W. Lynch, and adding that of R. W. Heneker, Esq. On the motion of R. W. Heneker, Esq., seconded by the Venerable Archdeacon Leach, it was unanimously resolved to adopt the following resolutions, which had been passed by the Catholic committee: "The committee resolve unanimously that the following requirements are, in the public interest, of a nature so urgent that they ought to be pressed upon the attention of the Government, with a view to immediate action. 1st. The continuance of the salaries of the school inspectors the same as in the year 1877–78. 2nd. Granting to the Superintendent the customary supplies for prize-books. 3rd. Granting to the Normal Schools the customary subsidy of $46,000." On the motion of R. W. Heneker, Esq., seconded by the Ven. Archdeacon Leach, it was unanimously resolved: "That a sub-committee be appointed to confer with a sub-committee of the Roman Catholic Committee on the subject of inspection, as well as on any other matters bearing on the general question of education, and that the Hon. the Superintendent be requested to act on both of these sub-committees as convener, said sub-committee to consist of R. W. Heneker, Esq., Dr. Church, the Lord Bishop of Quebec, Dr. Cook and Dr. Dawson. To this sub-committee were also referred several sets of school books from Messrs. W. J. Gage & Co., Publishers, Toronto, On the recommendation of of Mr. Inspector Emberson it was agreed to offer a grant from the fund for superior education to the best Protestant school fulfilling the requirements of a Model School in the County of Montcalm, to be reported on by Inspector Duval. The Secretary laid before the committee the returns from Examining Boards for Teachers' Diplomas of the examinations held in May and November last, together with suggestions from Dr. Cornish, President Board of Examiners, Montreal; that linear drawing, the use of the globes and book-keeping be in future omitted from the examination; that a simple form of diploma be prepared for all grades, offering to draft such for the sanction of the committee. The Secretary was instructed to write Dr. Cornish, that, as drawing, the use of globes, and book-keeping are required by law, they cannot be omitted from the examinations, but that they may be made as simple as necessary, and to ask him to have the kindness to prepare a draft form of diplomas for all grades of teachers.

Letters were read from Inspectors Fothergill and Hubbard, regarding the deficiency of candidates for teachers' diplomas in Scripture knowledge. It appears also from the returns of Inspectors of Academies and Model Schools, that in several of such institutions there is no reading of the Holy Scriptures, nor any instruction therein. The committee agreed to refer the question of Scripture instruction to the sub-committee on inspection. Messrs. Emberson and Wier were appointed, on the same terms as previously, Inspectors of the Protestant Academies and Model Schools in the Province of Quebec, receiving grants from the Fund for Superior Education.

MANITOBA.

A quarterly meeting of the Council of the University of Manitoba was held in the Education Offices on Monday, December 4th, the following officers being present, viz.:

The Bishop of Rupert's Land, Chancellor; His Grace the Archbishop of St. Boniface, Archdeacon Cowley, Revs. J. Black, D.D., J. Robertson, Canon Grisdale, Canon O'Meara, S. P. Matheson, R. Young, Professor Bryce, Professor Hart, W. C. Pinkham, and Fathers Lavoie, Dugas, Forget and Cherrier, Judge Dubuc and A. Cowan, M.D.

Amongst other business, the Council appointed the following gentlemen to constitute the Board of Examiners for the ensuing year, viz.:—*Classics*—Rev. A. Forget, Canon O'Meara, and Prof. Hart. *Mathematics*—The Chancellor, Prof. Clouthier, and Rev. A. Campbell. *Natural Sciences*—Prof. Bryce, Rev. Mr. Cherrier, and Mr. Heber Archibald. *Mental Philosophy*—Revs. Dr. Lavoie, and J. Robertson and Mr. Bain. *Modern Languages*—Rev. O. Fortin, Prof. Hughes, and Mr. Killam. Rev. J. Robertson and Mr. E. W. Jarvis were unanimously re-elected Registrars of the University for the ensuing year.

The Board of Education held its quarterly meeting on the same day. The proceedings were of a formal character.

The annual distribution of prizes to the successful students of Manitoba College took place in Knox College, Dec. 10th.

The Professors occupied chairs upon the platform. They were supported on either side by Rev. Jas. Robertson, Rev. E. Morrow, M.A., Rev. D. McRae, Rev. W. Ewing, B.A., Consul Taylor, Hon. S. C. Biggs, B.A., A. M. Sutherland, B.A., M.P.P., and W. R. Black, B.A., the last two being alumni of the college.

Notwithstanding the very disagreeable state of the weather a large number of citizens and friends of the students were present.

The following students have had the places assigned them in the

prize list as the result of examinations passed in the University of Manitoba, and at the close of each term of the session:

Medals—Form III—Governor-General's Silver Medal, J. B. Polworth. Form II—Argyle Bronze Medal, W. McK. Ōmand.

Prizes—Form II—Class Prize, R. R. Sutheriand. Form I—Class Prize, G. M. Atkinson and D. Anderson (equal); honorable mention—J. Mulvey and H. Ogletree.

Bursaries—Entrance Examination—1st and 2nd Bursaries, W. Scott and Donald H. McVicar (equal); 3rd, T. H. Scott; 4th, A. E. Hurssell. Donald H. McVicar is a pure Cree Indian.

QUERIES.

J. E. H.—Any one may write for a non-professional First Class Certificate at any time or any age. He will not, of course, receive his certificate until he has fulfilled the requirements for a professional certificate, including experience, and attendance at the Normal and Model Schools. The regulations are contained in the Compendium of School Law, to be found in every school section in the hands of the Trustees.

G. V.—The teacher does not lose the amount if the order for the Government Grant is mislaid. The Inspector may give another order, which will cancel the first.

M. N.—The metric system is not yet used in Canada.

Both books named are authorized in the subject of Book-keeping.

Any edition of Roscoe will do.

TEACHER.—(*a*) The Normal School sessions in Ontario last three months for second-class teachers.

(*b*) The travelling expenses of second-class candidates are paid by the Education Department.

(*c*) Students must purchase their own books for use in the Normal Schools, but they are supplied to them at one-half the retail price.

The Literature for First Class Certificate, Grade C in 1880, will be

Julius Cæsar—*Shakespeare.*
An Elegy in a Country Churchyard—*Gray.*
The Traveller—*Goldsmith.*
The Spectator—Papers 106, 108, 112, 115, 117, 121, 122, 123, 125, 126, 131, 269, 329, 335, 517—*Addison.*
Johnson's Life of Addison.
Macaulay's Life of Johnson.

No particular editions of these texts are prescribed, but the following good ones are mentioned in order to aid candidates:

The edition of Julius Cæsar, in the Clarendon Press series.
Morley's Spectator.
Matthew Arnold's Johnson's Chief Lives of the Poets. This contains both Johnson's Life of Addison and Macaulays's Life of Johnson.

The English authors to be read for First Class Certificates, Grade A and B, in 1880, are

CHAUCER—The Prologue to the Canterbury Tales.
The Nonne Preste's Tale.
SHAKESPEARE—Romeo and Juliet.
MILTON—Areopagitica.
POPE—The Essay on Man.
MATTHEW ARNOLD The Preface to Johnson's Chief Lives of the Poets.

N.B.—Candidates who take other departments will be required to show by passing an examination in Romeo and Juliet that they have read the play carefully, and that they are in the habit of writing the English Language correctly.

☞ No particular editions of these texts are prescribed, but the following good ones are mentioned in order to assist candidates:

Morris's Edition of Chaucer's Prologue to the Canterbury Tales and the Nonne Preste's Tale in the Clarendon Press Series.
Hunter's Romeo and Juliet.
Arber's Edition of the Areopagitica.
The Edition of the Essay on Man, in the Clarendon Press Series.
Matthew Arnold's Johnson's Chief Lives of the Poets.

W. D. M., *Summerside, P.E.I.*—(*a*) He can write at once in Ontario for a certificate of a corresponding grade to the highest he may hold from any Normal School in the British Dominions. (*b*) Nearly $800.

T. W. C. B., *Allenwood.*—Consult Compendium of School Law, page 236. Your Trustees have it.

Readings and Recitations.

*** ERRATA IN DECEMBER NUMBER.—In Latin Hymn, p. 289, *line 2*, for O mecum habitato, read *Tu* mecum habitats: line 5, for properat read properant.

OUR FIRST INSPECTOR.

AN OFF-HAND "COMPOSITION," BY A PUPIL OF MOUNT FOREST HIGH SCHOOL.

Ah! well we knew that, on some wintry morn,
When outside all was dreary, bleak, and chill,
There would invade our school the stalwart form
Of one who'd through each bosom send a thrill.

Was it a thrill of gladness, hope, or joy,
Or did we shake with a convulsive dread?
I think, though I can't tell the reason why,
We "trembled slightly" when we heard that tread.

But memory came with all its force and power,
And bore our thoughts back to a summer day
A year ago, when at the self-same hour
The self-same person came the self-same way.

Our school was then but five or six months old,
Yet here he found an "Intermediate Class"
"Intent on high designs," with names enrolled,
Just on the eve of marching up to pass.

We did march up, a joyous happy crowd;
No thought of failure in our wildest dream:
But back we came with lamentations loud,
Alas! we found "things are not what they seem."

He told us calmly when he called that time,
Fierce was the fight, for us so young and frail;
Right well he knew 'twas he who charged the guns
That pierced our ranks, and caused each heart to quail.

But failure taught us what we need to know,
And showed us each wherein our weakness lay;
We strengthened this, and tried again to show
Our neighbors we were quite as "smart" as they.

Winter and summer since that time have gone
When last we gazed upon his welcome face;
When now he calls, he'll find us further on—
I hope, in *all*, improvement he may trace.

Our force is larger, and commanded by
A gallant staff of faithful men and true;
In all the schools which claim the title High,
I doubt if he would find as fine a crew.

—MARGARET NAISMAITH.

Mount Forest, Nov. 22, 1879.

A LITTLE BOY'S TROUBLES

A RECITATION.

I thought when I'd learned my letters,
That all my troubles were done;
But I find myself much mistaken—
They have only just begun.
Learning to read was awful,
But nothing like learning to write;
I'd be sorry to have you tell it,
But my copy-book is a sight

The ink gets over my fingers:
The pen cuts all sorts of shines,
And won't do at all as I bid it;
The letters won't stay on the lines,
But go up and down and all over
As though they were dancing a jig—
They are there in all shapes and sizes,
Medium, little and big.

The tails of the g's are *so* contrary,
The handles get on the wrong side
Of the d's and the k's and the h's,
Though I've certainly tried and tried
To make them just right; it is dreadful,
I really don't know what to do,
I'm getting almost distracted—
My teacher says she is too.

There'd be some comfort in learning
If one could get through; instead
Of that, there are books awaiting,
Quite enough to craze my head.
There's the multiplication table,
And grammar, and—oh, dear me,
There's no good place for stopping,
When one has begun, I see.

My teacher says, little by little
To the mountain tops we climb,
It isn't all done in a miuute,
But only one step at a time.
She says that all the scholars,
All the wise and learned men,
Had each to begin as I do;
If that's so—where's my pen?

THANKSGIVING HYMN.

BY W. P. DOLE, ESQ., A.B., INSPECTOR OF SCHOOLS FOR THE 5TH DISTRICT, NEW BRUNSWICK.

TE DECET HYMNUS—"*Thou crownest the year with Thy goodness, and Thy clouds drop fatness.*"

Lord of the harvest! from whose hand,
In bounty royally outpoured,
Plenty hath flowed o'er all the land,
And all our garners full are stored,
To Thee we raise
Our song of praise,
To thee in Heaven and Earth adored.

Thy care preserved the precious seed,
Nursed tender shoot and bud and blade,
'Till in the time by Thee decreed,
Summer her glories bright displayed:
And Nature's voice
Bade Man rejoice
In Thee who Heaven and Earth hast made.

The early and the latter rain
Gladdened green fields and teeming ground;
And mellow fruits and golden grain
Sweet ripeness in Thy sunshine found:
By genial showers,
By glowing hours,
The year is with Thy goodness crowned.

Nor for Earth's kindly fruits alone
In grateful hymns Thy praise we tell,
We who, kept as Thy very own,
From war and strife, from sickness fell
And pestilence,
By Thy defence,
In Freedom, Peace and Safety dwell.

Lord of our life! whose open hand
Good on all living things doth pour,
For all rich blessings on our land,
For all the Harvest's happy store,
Our hearts shall be
Lift up to Thee,
To Thee whom Heaven and Earth adore!

St John, N. B., Nov. 5, 1879.

Official Department.

NEW BRUNSWICK.

The Board of Education at a recent meeting adopted a series of new regulations relating to school inspection and inspectors, the most important of which are here given.

In pursuance of and in addition to the specific duties assigned by law and by any existing regulation, each Inspector is to govern himself by the following regulations:

A School or Department ineligible for classification.—(*a*) The Inspector shall assure himself of the validity and class of the Teacher's License, the regularity of the Teacher's Agreement, and that the Register is carefully and properly kept. (*b*) He shall note the plan pursued in the classification of the pupils, the management of the School or Department, and especially the arrangement and allotments of the Time-Table, and witness the teaching of such classes, from the youngest to the oldest, as he may desire. (*c*) He shall offer such suggestions and criticisms to the teacher as he may consider best calculated to give effect to the methods of teaching and management inculcated at the Provincial Normal School, and enter his name, with the date and duration of his visit, in the Register. (*d*) He shall, except in cities and incorporated towns, examine the Records of the Board of Trustees to see that they are properly kept, and entered in a Minute Book. (*e*) He shall see that the supply of corporate seals is sufficient, and that they are properly used, and that blank forms of Assessment, Registrations and Returns are supplied. (*f*) He shall call the attention of the Trustees to the Merit Book authorized for schools, and to the provisions of the Law and the Regulations of the Board respecting School Prizes. (*g*) He shall specially note the condition of the School-house and premises, and see that the School is in all respects maintained and controlled in conformity with the provisions of the Law and the Regulations of the Board of Education.

A School or Department eligible for classification.—If at the date of the annual visitation the Teacher has been in charge of the School or Department for more than one term (this condition not to be required till Nov. 1, 1880), and presents for examination at least the average number of pupils in attendance for the term to date, where such average is 60 per cent. and upwards of the enrolled number, and at least 60 per cent. of the enrolled number where the average attendance is below 60 per cent. of the enrolment, the Inspector shall, in addition to the prescriptions above, proceed to examine the School or Department for classification, as follows:—

(*a*) In ungraded schools the pupils shall be presented in groups, and in graded schools in classes, each group or class professing one Standard of the Course of Instruction, or portions of two consecutive Standards, embracing one year's school work (or, in the case of pupils in the first Standard who have not been a year at school, and of grades admitted to a department less than a year previous to the inspection a definite portion of the Standard). A pupil shall not be presented in more than one group or class, nor shall a pupil who has successfully passed the general tests applied to a given group or class be presented in the same group or class at any subsequent inspection. Departments of High Schools are included herein, and of Grammar Schools, and those classes in the latter which are pursuing a course in advance of Standard VIII., and all classes in the former, shall, until the Course of Instruction for High Schools is prescribed by the Board of Education, profess the course in operation in the department for such classes.

(*b*) An *intelligent acquaintance* with the subjects of the Standard (or definite portion of Standards as the case may be) shall be understood to be professed by each group or class; and such intelligent acquaintance shall include also *manual skill*, *neatness*, and *taste* in all slate and blackboard work, writing, drawing and sewing (when taught); and the ability *to express* thought and sentiment in the subjects of reading and singing.

(*c*) The Inspector shall require such exercises of the several groups or classes as he deems necessary to determine with sufficient accuracy the *quality of the instruction given in the school or department.* He shall have a care that the general tests applied by him to the different groups or classes are such as, taken together, will discover the quality of the instruction given *in every subject of the Course*, within the Standards and portions of Standards professed. Only those pupils performing the exercises prescribed by the Inspector in a manner which satisfies him that they possess the intelligent acquaintance professed [as specified in (*b*)], shall be "passed" by the Inspector.

(*d*) In assigning the Rank of the school or department, the Inspector shall carefully and strictly apply the following principles:—

First Rank: When not less than 75 per cent. of all the pupils presented have been passed, and not less than 60 per cent. of each group or class, the school or department shall be classed in the first rank.

Second Rank: When not less than 60 per cent. of all the pupils presented have been passed, and not less than 50 per. cent. of each group or class, the school or department shall be classed in the second rank.

Third Rank: When not less than 50 per cent. of all the pupils presented have been passed, and not less than 40 per cent. of each group or class, the school or department shall be classed in the third rank.

Failed to Classify: When any school or department fails to be classed in one of the above Ranks, it shall be reported as having failed to classify.

(*e*) The additional grant accruing to teachers whose school or departments receive classification shall be drawn by the Chief Superintendent at the close of the school year, and paid in the month of December.

Superior Allowance.—(*a*) No pupils shall be admitted from a department of a Grammar School to examination for the superior allowance. (*b*) If a school or department which is eligible for classification fails to classify, the Inspector shall not, during the school year, examine any of its pupils for the superior allowance. (*c*) The school accommodation and appliances required by the Regulations of the Board of Education, must, as provided by the school or department, be sufficient, in the judg-

ment of the Inspector, otherwise he shall not entertain the application for inspection for this allowance. (*d*) Each group or class presented under Standards VI. or VIII., as the case may be, shall be examined by the Inspector *upon all the requirements of the Standard.* (*e*) Any pupil who was a member of the school or department during the term immediately preceding that in which the annual visitation is made, may, even though not belonging to the school or department at the time, be presented in the group or class for this examination, but he shall not be reckoned as a member of the school or department for any other purpose whatsoever. (*f*) The superior allowance shall be apportioned by the Chief Superintendent to teachers and Boards of Trustees at the close of the school-year, and be paid in the month of December.

Written Report to the Trustees.— In addition to any oral communications, the Inspector shall at the time of the inspection of any school or department (whether eligible or ineligible for classification), or within ten days thereafter, transmit to the Secretary of the Board of School Trustees, for the information of the Board of Trustees, a statement of the general results of the inspection; and he shall at the same time (or in the case of cities and towns, at the completion of his annual visitation to all the schools) offer any suggestions, in harmony with the Law and Regulations of the Board of Education, which he deems necessary respecting the organization and management of the school or department, or improvements required in respect of the school accommodation, appliances and premises, which communications shall be preserved by the Trustees; and if it shall appear at the next annual visitation that the Inspectors's suggestions have been disregarded, he shall report the fact to the Chief Superintendent, with such recommendations as he may deem proper.

Public Addresses.—In addition to any special meetings that may be required from time to time, the Inspector shall address the people as frequently as practicable during his tour of annual visitation (appointments being notified in advance, and the expenses of house accommodation for the same being defrayed by the people of the locality), urging the importance of sustaining efficient and permanent schools, pointing out the provisions of the law and the steps to be taken to secure its fullest advantages, the requirements respecting school accommodation and appliances, the means necessary to ensure the regular support and proper conduct of schools, the necessity of the regular attendance of pupils at school, the importance of the Trusteeship, the value of well-qualified teachers, and the obligations resting upon every community to co-operate with Trustees and Teachers in discharging the duties assigned to them by our school system.

Institutes —As a member of the Committee of Management of the County Teachers' Institutes convening within his Inspectoral District, it shall be the duty of the Inspector to assist the Committee, to attend the meetings of each Institute, and to promote the attainment in the highest degree of its objects as specified by regulation. It shall also be his duty to attend the annual sessions of the Educational Institute whenever practicable.

REVIEWS.

LATIN ACCIDENCE. *By G. L. Bennett, M A.* Rivingtons This is the Latin Accidence contained in Mr. Bennett's excellent "First Latin-Writer," a notice of which was given some time ago. In this little work of 52 pages the essentials of Latin accidence are given; it is just the thing to put into the hands of pupils who have not time to spend over the piecemeal work of the "Principia Latina" and similar books. In our opinion the "Synthetic" method is being overdone. A boy spends from six months to a year in getting through a work in which the essentials of Grammar are doled out to him in insignificant scraps, and then the teacher finds that his pupil has no connected knowledge of the most important points of Latin Grammar. We believe that with the "Latin Accidence," and such a book as Bennett's easy Latin stories, more satisfactory results could be produced in half the time that is now spent in getting over the dribblings of such unsatisfactory books as the "Principia."

CÆSAR DE BELLO GALLICO. *Book I. By J. H. Merryweather M.A., and C. C. Tancock, M.A.*, with Introduction, Maps, Grammatical and Historical Notes, &c. Rivingtons: London, Oxford and Cambridge. The Introduction gives an account of "Gaul and its Relations with Rome," and a "Life of Cæsar till B.C. 58." The Grammatical Notes occupy 63 pages; but they are not too full—they are just what they ought to be in a book for young students. The geographical and biographical indexes are all that can be desired. This would be a capital book to use in connection with Bennett's "Latin Accidence," noticed above.

HOMER'S ILIAD. *Books I. and II. By Arthur Sedgwick, M.A. (of Rugby).* Rivingtons. We fully agree with the remark of the editor of this work, that the great obstacle to the beginner in reading Homer is not the meaning but the accidence; the forms of the words are so difficult from those which he has learned in his grammar that he is likely at first starting to be in despair. The editor's design has been to meet this difficulty, and we think he has successfully accomplished his work. He has given in the notes a brief but clear statement of the Epic forms as they arise, and in the "Notes on Language" he has given a well-arranged *resume* of the peculiarities of Homeric Syntax and Accidence. The notes are very complete, and contain so much information about Homeric forms that the mere dictionary-work of the student will be greatly lightened. We can confidently recommend this book as one of the best, if not the very best, we have seen.

HYDROSTATICS AND PNEUMATICS *By Philip Magnus, B.A, B.Sc.* THERMODYNAMICS. *By Richard Wormell, D.Sc., M.A.* These are parts of the series of "Loudon's Science Class-Books," now in course of publication by Longmans, Green & Co. The treatment of the subjects is elementary, yet quite scientific; the fundamental partsare stated and discussed with the fulness needed to place their scientific significance in a clear light The young teacher and the private student will find these books excellent introductions to the sciences of which they treat. They are published at the moderate price of 1*s.* 6*d.* each.

HARPER'S LATIN DICTIONARY: Harper Bros., New York. This is a revision of Freund's great dictionary. It is edited by E. A. Andrews, LL.D. Revised, enlarged, and in great part rewritten by Charlton T. Lewis, Ph.D., and Charles Short, LL.D., Professor of Latin in Columbia College, N.Y. Among the peculiar features which distinguish the present work may be noted the comparative breadth of its scope and the comprehensiveness of its details. It forms a more complete guide to the entire literature than any previous work. In regard to the Latin orthography, it is the only work which embodies the results of recent investigations by philologists like Ritschel, Corssen, Brambach, and others and which are accepted as authorities in the latest and best editions of the Latin classics.

READINGS FROM ENGLISH HISTORY. Harper Bros., N. Y. These "Readings" are selected from foreign and American writers, and edited by John Richard Green, M.A., LL D. Three parts in one vol. They embrace incidents from Hengist to Victoria, and contain Mr. Freeman's account of the Battle of Hastings, Kingsley's well-known defence of the poetry of Puritanism, Macaulay's sketch of the landing of William III., and other extracts of a similar character.

STUDIES OF THE GREEK POETS. Harper Bros., N.Y. These "Studies" are in two vols., and are by John A. Symonds. They form an admirable summary of Greek poetical literature, and are written in an easy and interesting style.

A TRUE REPUBLIC; by *Albert Stickney.* Harper Bros., N.Y. This book gives a summary of the English and American systems of government. It points out for remedy great defects in the latter.

WHAT MR. DARWIN SAW in his Voyage Round the World in the Ship "Beagle." Harper Bros., N. Y. Darwin's narrative of his voyage around the world is the source from which the editor has compiled an admirable book for youthful readers, at once diverting and instructive. It is adorned with one hundred illustrations, besides maps and charts.

TYROL AND THE SKIRT OF THE ALPS. Harper Bros., N.Y. In this book, Geo. E. Waring, jr., has given the public an entirely fresh and original volume of travel through the charming country of the Tyrol. His narrative is sprightly and entertaining; his observations are shrewd and accurate.

BENNETT'S LATIN ACCIDENCE: Rivingtons; BENNETT'S FIRST LATIN EXERCISE BOOK: Rivingtons. These two books, when bound together, constitute BENNETT'S FIRST LATIN WRITER. The LATIN ACCIDENCE calls for no special remark, but the FIRST LATIN EXERCISE BOOK appears to contain a well-arranged course of exercises introductory to Latin prose composition, which might advantageously be used in our High Schools.

MILTON'S PARADISE LOST, Books I. and II., and LYCIDAS. By *Homer B. Sprague.* Ginn & Heath, Boston. This volume really consists of two text-books bound together. A large amount of introductory matter is prefixed to each, and the notes, which are placed at the foot of the page, are very copious. A peculiar feature is the attempt to illustrate *Milton's* cosmography by means of diagrams. The work of the editor has been carefully done, and the usefulness of the book is increased by indexes of the words explained. The typographical execution is excellent.

COWPER'S SIMPLE POEMS, edited by *Francis Storr.* Rivingtons. This little volume contains nineteen of Cowper's shorter poems, a life of that poet, and about twenty pages of notes. These seem on the whole judicious.

THE LIFE OF THE DUKE OF MARLBOROUGH, by *Louise M. Creighton*, is the fifth of the series of historical biographies which the Rivingtons are engaged in publishing. The object of this series is to make history attractive to the young. From this point of view the selection of the life of Marlborough as the subject of one of the volumes seems to be unfortunate. Though his military and diplomatic abilities were very great, his character and career were such that only a literary artist of the highest rank could make them interesting to the average boy. It is then no reflection on Miss Creighton to say that this work is not likely to be read by many young people. We think it probable, however, that it will have adult readers, because it is clear, brief and accurate.

XENOPHON'S ANABASIS OF CYRUS, Book I. By *R. W. Taylor.* Rivingtons. This is a remarkably good text-book. It contains, besides a carefully edited text divided into paragraphs with English headings, an historical introduction, grammatical and other notes, which are neither too short nor too full, a short Greek syntax, a map, a vocabulary, and indices to the notes. In order that pupils may be aided in using the syntactical sketch, references to the rules have been introduced into the text. The work is much superior to the editions of the "Anabasis" generally used in our schools.

MAGAZINES.

We have received THE AMERICAN JOURNAL OF MATHEMATICS, *Vol. II., No. 3.*—It is a publication of the highest class and of the highest excellence. When we remind our readers that so distinguished a man as Prof. Sylvester is editor-in-chief, we furnish them with the best possible guarantee of the value of the Journal. The contents of this number are:

On the Geographical Problem of the Four Colors.—By A. B. Kempe, B.A., London, England.

Note on the Preceding Paper.—By William E. Story.

The Quaternion Formulæ for Quantification of Curves, Surfaces and Solids, and for Barycentres.—By W. I. Stringham, Fellow of the John Hopkins University.

On the Dynamics of "Curved Ball."—By O. Stone, Cincinnati, O.

Note on Determinants and Duadic Synthemes.—By J. J. Sylvester.

Tables on the Generating Functions and Groundforms for the Binary Quantics of the First Ten Orders.—By J. J. Sylvester, assisted by F. Franklin.

Note on the Projection of the General Locus of Space of Four Dimensions into Space of Three Dimensions.—By Thos. Craig, Fellow of the John Hopkins University.

On the Motion of an Ellipsoid in a Fluid.—By T. Craig.

On Certain Ternary Cubic-Form Equations.—By J. J. Sylvester.

A New Proof of the Theorem of Reciprocity.—By Dr. Julius Petersen, of Copenhagen, Denmark.

On a New Action of the Magnet on Electric Currents.—By E. H. Hall, Fellow of the John Hopkins University.

Subscription price of the Journal is $5.00 a volume; single numbers $1.50. Communications and subscriptions to be addressed to WILLIAM E. STORY, *John Hopkins University*, Baltimore, Md.

That admirable publication, the ATLANTIC MONTHLY, has been enlarged from 128 to 144 pages, and it is printed on new and larger type. The January number, by the quality of its contents, more than maintains the great reputation of the magazine. In the department of prose fiction we are treated to the second part of "Thirty-seven Hundred and Fifty-eight," "Electioneerin' on Big Injun Mounting," and the first two chapters of "The Undiscovered Country," a new serial story of remarkable promise by *Mr. Howells*, the editor. There are four short poems, "Do You Remember," by *W. W. Storey*, the eminent sculptor; "Intermezzo," by *Harriet Prescott Spofford;* "The Coming Era," by *Oliver Wendell Holmes*, and "St. Martin's Summer," by *John Greenleaf Whittier.* There are critical papers on "Old Creole Days and Other Novels," "Webster's Speeches," Mr. Gilman's new edition of Chaucer, and two new French novels, and notices of a long list of holiday books. The other papers are "Equality," "Reminiscences of Washington," the first of a series of articles on the political and social life of the capitol of the United States; "The Bonanza Farms of the West;" "Habits of English Life," a very entertaining article by *Richard Grant White;* and "The Hunt Memorial Exhibition." A collection of brief, witty, pithy articles under the heading of "The Contributors' Club," concludes a very good number.

BLACKWOOD for December has been received from the Leonard Scott Publishing Co., 41 Barclay Street, New York. "Theatrical Reform" discusses the difficulty of establishing a national theatre, and has some timely strictures on the Sara-Barnhardt craze. Part IX. of Reata is given, and a new serial, "Bush Life in Queensland," is begun. "The Late John Blackwood" is an obituary of the last surviving son of the founder of the magazine. The article on "Progress" questions whether, in spite of the ceaseless boasting about progress, real progress has been made in many important concerns, as medicine, the administration of law, &c. The other articles are "Political Rabies," "Old Squire and New," "The Roads and Rivers of Norfolk and Suffolk."

THE CONTEMPORARY REVIEW for December has been received from Messrs Strachan & Co., 34 Paternoster Row, London. It contains "The Lord's Prayer and the Church, a series of remarkable letters addressed to the clergy, by John Ruskin; "India under Lord Lytton," by Col Robert D. Osborn; "On the utility to Flowers of their Beauty," by the Hon Justice Fry; "Where are we in Art?" by Lady Verney; "Life in Constantinople 50 years ago," by an Eastern statesman; "Miracles, Prayer and Law," by I. Boyd Kinnear; "What is Rent?" by Bonomy Price; Buddhism and Jainism, by Prof. Monier Williams; "Lord Beaconsfield;1. Why we follow him, by a Tory; 2. Why we disbelieve in him,' by a Whig;" "Contemporary Life and Thought in France," by Gabriel Monad. This is one of the very best of our periodicals; no High School reading room should be without it

THE NORTH AMERICAN REVIEW for January has been received from D. Appleton & Co., 549 and 551 Broadway, N.Y. M. De Lesseps discusses the various schemes that have been proposed for the construction of a ship canal across the Isthmus of Darien. He considers the Nicaragua Canal scheme unsatisfactory, and forcibly maintains the necessity of a canal having one level between the oceans. Francis Parkman has an article on "The Woman's Question Again," in which he reviews the arguments in favor of woman suffrage, which were advanced by five writers in the November number of the *Review.* Mr Froude gives the second part of his article on "Romanism and the Irish race in the United States." In this article he recites the history of English rule in Ireland—a rule which, in his opinion, has been marked by a series of blunders. Henry James gives a very interesting article on the famous French critic, St. Beuve. Prof. Winchill has a timely and thoughtful article on the "Metaphysics of Science," in which he ably maintains that the explanations science gives of phenomena, do not go far enough: "they are not ultimate explanations By the inherent principles of our mental being we postulate and posit motive and agency behind the last explanation of science" In his second paper on "The Permanence of Political Forces," Mr. Cuthbert Mills discusses the question of currency. R. H. Stuard reviews three volumes; Arnold's Light of Asia, Dr. Joyce's Blanid, and Bayard Taylor's Poetical Works.

The GENTLEMAN'S MAGAZINE for December has been received from Chatto & Windus, Piccadilly, London W. It contains the conclusion of Mrs. Linton's story, "Under which Lord;" The Wants of Ireland, by Arthur Arnold; Vital Air in the Sun, by R A. Proctor; A Side-Light on Gray's Bard, by Grant Allen Pocket Boroughs. The Old Tavern Life, and Table Talk, by the Editor. It is a good number.

THE WESTERN, November-December number, has been received from the publishers, G. J. Jones, & Co., St. Louis. It is a very readable number, containing the following articles:—Charles Sumner; England in the Age of Spenser; Diderot; The Intellectuality of Music; Arnold of Rugby; The Philosophy of Art; Book Reviews and Current Notes. Many of the articles published in the *Western* are of special interest to teachers.

SCRIBNER'S MONTHLY. *Scribner & Co., N.Y.* The illustrated articles are The United States Life Saving Service; Success with Small Fruits, No. III. of Rev. E. P. Roe's very practical articles; Young Artists Life in New York; The Acadians of Louisiana; and American Arms and Ammunition. Serial Tales: The Grandissimes; and Confidence, by H. James, Jr. (colored); Stonies, Thirza, and A Personal and what came of it, both good. Topics of the Time; The World's Work; Home and Society; and Culture and Progress are well edited departments.

ST. NICHOLAS. If St. Nicholas ever gets into a home, its non-arrival at the regular time upsets the whole family and worries the Post-master. It is published by Scribner & Co.

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Canadian Literary Institute,
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Also, **Complete Courses for the Training of Teachers** for Certificates of all Grades, and of pupils generally for the Entrance Examinations in the **Schools of Law and Medicine** connected with the University.

New classes in the Preparatory and Teachers' Courses are formed at the commencement of the second half-year, **FEBRUARY 6th**, but students entering after the holidays, **JANUARY 2nd**, can have the advantage of a review of any subjects selected, with the regular classes preparing for the **Semi-annual Examinations**, or they can enter the Special Classes with those now preparing for the Teachers' Examinations.

Any student passing satisfactory examinations upon the work of any year of the Collegiate Course, receives a Certificate to that effect. This Certificate is under the seal of the College, and shows the exact standing of the student in each department of the year's work.

PRIZES.

Prizes are awarded for General Proficiency in the work of any year of the **Preparatory** and **Collegiate Courses**, and for proficiency in the several Departments; also to the students taking the best Annual Certificates in the respective years of the Course, and to those taking the best Teachers' Certificates, of the respective classes.

THE LADIES' DEPARTMENT.

Young women in the Ladies' Department have full admission to all the College Classes, and enjoy all the educational advantages offered.

The Institute is affiliated with the University of Toronto. The First and Second University Examinations are held in it concurrently with those at Toronto, thereby saving students taking the University Course the expense and trouble of going to Toronto for these examinations.

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J. E. WELLS, M.A.,
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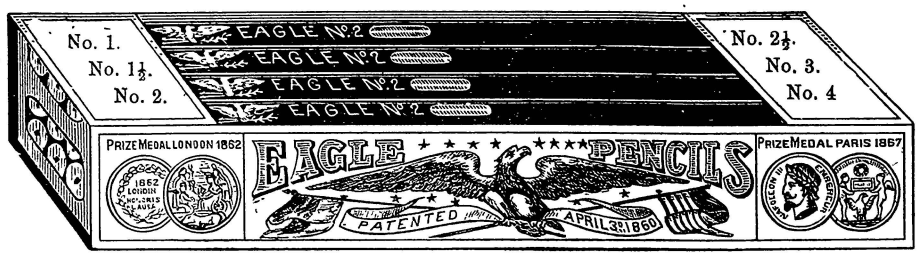

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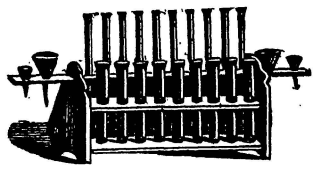

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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1878.
Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction, Quebec.
Recommended by Chief Superintendent of Education, New Brunswick.
Recommended by Chief Superintendent of Education, Nova Scotia.
Recommended by Chief Superintendent of Education, British Columbia.
Recommended by Chief Superintendent of Education, Manitoba.

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

SCHOOL MATTERS IN THE ONTARIO LEGISLATURE.

It is not expected that any important changes will be made in the school law during the present session. Two or three members of the House have, however, introduced amendments concerning details in the working of the law. The one that most concerns teachers was introduced by Mr. Watters, of North Middlesex, and provides for the reduction of the summer holidays from six to three weeks. Several members spoke in favor of the amendment. It is unfortunate that in a Local Legislature there are always a number of members who seem to pride themselves on showing that they never had the opportunity of acquiring liberal and enlightened views concerning educational matters. It was pleasing to notice the fact that one at least of the new members holds views in accordance with those of intelligent educators and social science reformers in all civilized countries, and is able to express them in an able and decided manner. Dr. McLaughlin, of West Durham, showed that tho number of cases of brain fever and other brain affections in children under twelve years of age was frightfully on the increase, and proved very clearly that compelling *little* children (the class for whom the advocates of the proposed amendment were specially pleading) to go long distances in the hot sun and sit in close, musty school-rooms studying all day, must have an injurious effects on their mental and physical natures.

Hon. Mr. Crooks showed that the number of school days in Ontario was more than in England or the United States, but promised to deal with the matter, if necessary, in a Bill which he proposes to introduce. There is one question to which we would respectfully direct his attention. In the 29th clause of his Bill of last session no distinction was made between the erection of a *new* school-house to take the place of an old one, and the providing of necessary additional accommodation. We think a distinction might be clearly and simply made which would remove the anomaly of holding the trustees personally responsible for providing accommodation for the pupils seeking admission, and yet directly crippling them in their efforts to do so.

The School Book question was brought before the House by an enquiry by Mr. Baxter. The Minister of Education explained his duty to be to see that the public is supplied with text books of the highest merit and best mechanical construction at the lowest possible prices.

When Mr. Crooks assumed his present position, he found the policy of the old Council of Public Instruction with regard to the authorization of Text books to be surrounded with many difficulties in its practical working. He at once entered upon a careful investigation of the departmental, commercial, and public aspects of the question, and was led to the conclusion that he had two clear duties to perform; First, to authorize the best possible books in the different subjects, and second, to have them sold at the lowest possible prices, provided that they should always be printed and bound in accordance with departmental regulations. A carefully selected list of books was authorized, and the policy adopted resulted in the production of the best school books ever published in Canada. There is no comparison between the mechanical execution of the books of to-day and those of five years ago. In some cases there may yet be room for improvement, but Mr. Crooks only requires to persevere in the course he has adopted, to ensure in a short time a series of text-books of which any country might feel justly proud.

The clearest proof that the books selected by Mr. Crooks possesses genuine merit, both as to cheapness and contents, is found in the facts that they have to a large extent supplanted those formerly in use, and that most of them have recently been adopted in the other provinces of the Dominion in which changes have taken place.

THE UNIVERSITY OF HALIFAX.

The report of the Registrar of the above University for the year 1879 contains the following summary: "Seven examinations were held during the past year, attended by 25 candidates, of whom 17 passed and 8 were rejected. Up to this time 57 candidates have been examined, 40 of whom have passed, the nature of the examination and the standard of attainment required of candidates accounting for the large number of rejections. Every one of the affiliated colleges, with the single exception of Acadia, have sent up candidates to one or more of the examinations, and Pictou Academy and Halifax High School have both successfully prepared candidates for matriculation. The support of the colleges is making itself more felt

each year as the advantages of free and fair competition between the students of the various institutions are becoming more generally recognized.

Our Nova Scotia notes for this month furnish a tolerably complete report of the proceedings of the Senate of the University at its recent annual Session. From these sources of information we gather that the University, if not meeting the anticipations of its more sanguine promoters, is nevertheless developing with reasonable rapidity, and has fair prospects of ultimate success. As the Senate is chiefly composed of representatives of the affiliated colleges, the indirect benefits accruing to the cause of higher education from the friction of mind on mind must be very considerable. Without at all entering upon the vexed questions of large against small, or State against Denominational Colleges, we think none can dispute the fact that in small, isolated institutions such as the College of Nova Scotia, there is an inevitable tendency towards narrowness of vision and monotony of procedure. By bringing together, in frank educational conference, the Faculties of the several Colleges of the Province, the University has supplied a force which will materially strengthen the power of resisting such tendency. So far as this point is concerned, the University Act may be considered to be in the direct interest of the Colleges, as tending to promote their efficiency. As to its effect in an external unification of higher training in the Province, we could pronounce more definitely than we can do now, had the Colleges been required to hold their degree-conferring powers in abeyance as a condition of affiliation, or had they voluntarily consented to such abnegation of chartered rights. Under existing circumstances, we can only await the issue of the experiment with great interest.

UNIVERSITY REFORM.

Before long, if not during the present session, an effort will be made by the management of the University of Toronto and of University College to induce the Legislature to make additions to the revenue of these institutions. As to the course which the Legislature ought to take in dealing with such an application it will be time enough to express an opinion when the grounds on which it is based are made public, but even at this stage of the agitation it is proper to say that no such application is likely to be very successful until the public are made thoroughly acquainted with the state of the University endowment.

It is one of the educational anomalies of the day that the proceedings of the University Senate are withheld almost entirely from the public view. There is not another trust of so great importance, either financially or educationally, in the Province, and, strange to say, about this most important one of all the public know literally nothing. Nor do the graduates themselves know much more. Some of them are members of Senate, and many of them are members of Convocation, but the Senate proceedings are secret and Convocation never meets for the transaction of business. We do not wish to be regarded as insinuating bad management of the trust, much less positive wrong-doing; but at the same time we take the liberty of warning all parties interested that in order to make the University and College as popular as they ought to be the Senate meetings must be thrown open to the public.

There is another matter which comes up in this connection, and which is entitled to attention on quite other grounds. This is the expediency of making certain changes in the course of study in University College. The change most needed just now is to shorten that course by cutting off the first year altogether. This would make the College more efficient by enabling the professors and tutors to devote themselves more exclusively to advanced instead of elementary work. There is not, and never has been, enough of teaching done in that institution, and one great reason for this defect has been the want of time on the part of the teachers. The work of the first year in the College is purely elementary, and can be done not merely as well, but very much better, in the High Schools of the Province. Once—and that not many years ago—this assertion could not have been made, but during the past few years a great revolution has been wrought in the condition of the High Schools and the character of the work they do. The teaching of classics, mathematics, English, French and German—and these cover the whole ground of first year work in University College—can be more efficiently performed up to a certain point in a good High School than in any college; and we have no hesitation in affirming that that point is at least as high as the upper limit of the present High School programme. The "Upper School" work in High Schools coincides pretty closely with the first year course in the College, and the schools would be as much benefitted by having this work to do as the college would be benefitted by being relieved of it. Every High School master wants to keep his pupils as long as he can, and he certainly should be allowed to keep them through the whole course where his doing so is quite compatible with the interest at once of the pupils and the public.

THE SPECIAL GRANT TO COLLEGIATE INSTITUTES.

"Head Master's" criticism of the basis on which a special grant of $750 is made to each Collegiate Institute will, we have reason to believe, meet with the approval of the great majority of High School masters. The condition which discriminates in favor of the Collegiate Institutes is, as "Head Master" affirms, a part of the old system; it is based upon wrong principles and is attended with unsatisfactory results. If the Latin test is to be retained, "Head Master" is probably right in recommending the reduction of the *average* number from sixty to forty, and the introduction of certain other conditions, especially that of insisting on a certain average attendance of "Upper School" pupils. Doubtless the evils of the present system have not escaped the attention of the Minister of Education; but whether he will feel inclined to meddle with what the Collegiate supporters may warrantably claim as "vested rights," is another question. It would, perhaps, be inexpedient to withdraw the special grant to the Institutes; but certainly something should be done for those excellent schools, several of which, as "Head

Master" says, are superior to some of the Institutes, and on a par with the best of them. If the Legislative grant for High School purposes were increased, the increase might be so apportioned as to materially benefit those schools, which in all but the unsatisfactory *Latin* test are the equals of the Institutes.

ANNUAL REPORT OF THE MINISTER OF EDUCATION.

The Annual Report of the Hon. Mr. Crooks for 1878 was laid before the Legislature on January 15th. It is not quite so large a volume as some of its predecessors, but it contains fully as much valuable information regarding all grades and classes of the schools of Ontario. There are some who complain because the report for 1878 is not brought down until 1880. This is quite as early as possible, however. It must be remembered that the reports from Trustees and Inspectors for 1879 were not all sent in to the Department at the time Mr. Crooks presented his report for 1878. In some States the school year ends at Midsummer, and the Annual Reports presented to Legislatures can thus be brought down to within six months of their date of issue. There is some reason for such a course, too, in the fact that the long vacation then separates the two school years.

The following are selections from the summaries in the Minister's Report:

I.—RECEIPTS AND EXPENDITURE OF PUBLIC SCHOOL MONEYS.

The Receipts.

1. The amount apportioned from the legislative grant was $258,538—increase, $6,576. The apportionment is made to the several counties, townships, cities, towns and incorporated villages, according to the ratio of the population in each, as compared with the whole population of the province. The principle of distribution is according to the average attendance and the time of keeping open the schools, public and separate, in each municipality.

2. The amount apportioned from the legislative grant (through the Educational Depository) for the purchase of maps, apparatus, prize and library books was $15,756—decrease, $2,347.

3. The amount from county municipal assessment was $872,354, showing an increase of $14,049.

4. The amount available from trustees' school assessment was $1,405,686—decrease, $158,439.

5. The amount from Clergy Reserves moneys, and from other sources, applied to school purposes in 1878, was $694,984—decrease, $35,702.

6. The total receipts for all public school purposes for the year 1878 amounted to $3,247,321, showing a decrease of $175,863 over the total receipts of the preceding year.

The Expenditure.

1. The amount paid by trustees for salaries of teachers in 1878 was $2,011,207—decrease, $26,891.

2. For maps, globes, prize books and libraries, $42,507—decrease, $5,032. The legislative aid given to trustees (through the Educational Depository) for these objects was $15,756.

3. For sites and building of school-houses, $413,392—decrease, $64,000. For several years after the passage of the School Act of 1871, a large amount was yearly expended in the erection of new school houses, so that the country is tolerably well supplied with them. A decrease of this item may therefore be expected for some years to come.

4. For rent and repairs of school-houses, &c., $422,239—decrease, $88,218.

5. Total expenditure for all public school purposes, $2,889,347—decrease, $184,142.

6. Balance of school moneys not paid at the end of the year when the returns were made, $357,974—increase, $8,278.

II.—SCHOOL POPULATION, AGES OF PUPILS, PUPILS ATTENDING PUBLIC SCHOOLS, AVERAGE ATTENDANCE.

The Statute requires that the trustees' returns of school population shall include the entire number of children resident in their school division; and it confers the *equal* right of attending the schools upon all residents in such divisions between the ages of five and twenty-one years.

1. The school population (comprising only children between the ages of five and sixteen years) reported by trustees was 492,360—decrease, 2,444.

2. The number of pupils between the ages of five and sixteen years attending the schools was 467.433—decrease, 1,808. Number of pupils of other ages attending the schools, 21,582—decrease, 37. Total number of pupils attending the schools, 489,015—decrease, 1,845.

3. The number of boys attending the schools, 260,400—decrease, 670. The number of girls attending the schools, 228,615—decrease, 1,175.

4. The number reported as not attending any school for four months during the year is 27,415—increase, 1,441. These were between the ages of seven and twelve years, during which school boards and trustees are required by the Public Schools Act to see that all the children in their school districts attend school for four months in the year.

5. The average attendance, viz., the aggregate daily attendance divided by the legal number of teaching days in the year, was 224,588—increase, 7,404.

III.—CERTIFICATES, ANNUAL SALARIES OF TEACHERS.

1. *Number of teachers, male and female.*—In the 4,990 schools reported, 6,473 teachers have been employed—increase, 5; of whom 3,060 are male teachers—increase, 40; and 3,413 are female teachers—decrease, 35. It will thus be seen that there are about 400 more female than male teachers.

2. *Teachers' Certificates.*—Total number of certificated or licensed teachers reported, 6,473—increase, 5; Provincial Certificates, 1st class, 210—decrease, 40; 2nd class, 1,409—increase, 105; County Board certificates of the old standard, 1st class, 328—decrease, 43; 2nd class, 142—increase, 8; 3rd class, none—decrease, 14; New County Board, 3rd class certificates, 3,904—decrease, 22; interim certificates, 480—increase, 11.

3. *Annual salaries of teachers.*—The highest salary paid to a male teacher in a county, $800—the lowest, $125; in a city, the highest, $1,000—the lowest, $500; in a town, the highest, $1,200—the lowest, $200. The average salary of male teachers in counties was $382—of female teachers, $247; in cities, of male teachers, $730—of female teachers, $313; in towns, of male teachers, $577—of female teachers, $274. The average decrease of male teachers' salaries for the province during 1878 is $3 per male teacher.

IV.—ROMAN CATHOLIC SEPARATE SCHOOLS.

1. The number of Roman Catholic Separate Schools is 177—decrease during the year, 9.

2. *Receipts.*—The amount apportioned and paid by the Department of Education from the Legislative Grant to Separate Schools, according to average attendance of pupils, as compared with that at the Public Schools in the same Municipalities, was $12,620—increase, $244. The amount apportioned and paid for the purchase of maps, prize books and libraries, upon the usual condition of an equal sum being provided from local sources, was $788—decrease, $442. The amount of school *rates* from the supporters of Separate Schools was $79,120—increase, $6,942. The amount *subscribed* by supporters of Separate Schools, and from other sources, was $35,019—increase, $537. Total amount received from all sources was $127,549—increase, $7,282.

3. *Expenditure* —For payment of teachers, $70.301—increase, $100; for maps, prize books and libraries, $1,914—decrease, $896; for sites and building school houses, $25,864; for other school purposes, $22,479.

4. *Pupils.*—The number of pupils reported as attending the Separate Schools was 25,280—increase, 328. *Average attendance*, 13,172—increase, 623.

5. The whole *number of teachers* employed in the Separate Schools was 333—decrease, 1; male teachers, 104—decrease, 1; female teachers, 229.

6. The same table shows the branches taught in the Separate Schools, and the number of pupils in each branch; also the number of schools using maps, &c.

V.—HIGH SCHOOLS, RECEIPTS AND EXPENDITURE, PUPILS, NUMBER OF SCHOOLS.

Receipts.—The balances reported from the preceding year (that is, of moneys not paid out by the 31st December, 1878), were $13.810—decrease, $2,856. The amount received by the High School Boards from legislative grant for the salaries of teachers was $77,106—increase, $1,947. The amount of legislative grant apportioned for *maps, prize books*, etc., was $1,796—increase, $233. The amount of municipal grants in support of High Schools was $202,848—increase, $44,054. The amount received for pupils' fees was $21,581—increase, $828. Balances of the preceding year and other sources, $103.045—increase, $18,460. Total receipts, $420,-188—increase, $62,667.

Expenditure.—For salaries of masters and teachers, $223,010—increase, $11,402; for building, rent and repairs, $83,968—increase, $32 551; for fuel, books and contingencies, $83,904—increase, $7,606; for maps, prize books, apparatus and libraries, $5,126—increase, $739. Total expenditure for the year 1878, $396,010—increase, $52,300. Balance of moneys, not paid out at the end of the year, $24,178—increase, $10,367.

Number of Pupils, 10,574—increase, 1,345.

Number of Schools, 104.

VI.—HIGH SCHOOLS, NUMBER OF PUPILS IN THE VARIOUS BRANCHES, MISCELLANEOUS INFORMATION.—HEAD MASTERS AND THEIR UNIVERSITIES.

Table H shows both the subjects taught and the number of pupils in each subject in each of the High Schools, the names, university degree (or certificate) of the Head Master, and the number of masters employed in each school, &c.

No. of Pupils.—In English Grammar and Literature, 10,486; in Composition, 9,844; in Reading, Dictation and Elocution, 10,184; in Penmanship, 7,683; in Linear Drawing, 2.881; in Book-keeping, 4,011; in Arithmetic, 10 450; in Algebra, 10,212; in Geometry, 9 723; in Mensuration, 5,483; in History, 9,855; in Geography, 10,074; in Natural Philosophy, 2,375; in Chemistry, 2,979; in Natural History, 242; in Physiology, 328; in French, 3,588; in German, 516; in Latin, 4,729; in Greek, 883; in Gymnastics and Drill, 1,822.

Of the school-houses, 74 were of brick, 20 stone, 10 frame; 6 were rented or leased, the remainder freehold. The tendency everywhere is to improve the buildings and grounds required for High School purposes, so as to make each High School worthy of its now recognized position of being the local College.

It is astonishing how careless candidates for the position of teacher sometimes are in the spelling, grammatical construction, arrangement, &c., of their applications. The following are given as selections from a number received in answer to a single advertisement by a School Board in England:—

No. 8.—"I have a kind and enticing way with me with children. I am honest and industrious," &c.

No 13.—Presents his application and testimonials on four sheets of badly written and untidy note paper, each sheet different both in size and color from its companions. This is not a case where "variety pleases."

No. 27.—Mr. A. B. thinks it sufficiently respectful in this case to write his application on a leaf of paper torn from a child's ordinary exercise book. His style of abbreviation, too, is not good. These are specimens—"gov.," "exam.," "off" (for offer), "ass." (for assistant, I suppose?).

No. 32.—Writes very nicely on scented paper, and "hopes you will think favorably and let him know. He was in conjunction with good discipline popular with his class." (*Vide* test.)

No. 49.—Mr. ——— has been used to "Sunday Duty," and I suppose lest the precious contents of his interesting communication should escape during transmission through the post, he drops his sealing-wax on the thoroughly adhesive envelope in three several places. These drops may be to act as watchmen! Stay! perhaps they were meant as "kisses" for our kind-hearted Rev. Secretary.

No. 51.—"Sir, I being an applicant for a situation of an Assistant Master see that you are advertising for one." Head Master "can confidently recommend" this gentleman "to any schoo committee." Perhaps so, but from the general style of his letter, others may be allowed to question the propriety of his doing so.

No. 57.—This is unique. "Having seen your advertisement I beg to off myself for the cituation." "I am not the holder of a certificate." (What a pity!) The writer of this application presents six testimonials, and can "produce others from the Rev. Dr. ——— and W. E. ———, B. A.," if required. He is, however, unfortunate in the selection of those sent. Test 1:—Mr. A. B. "bears an irreprochable character" and "comes out of a very excelent family." "His diligence as a Sunday school teacher," &c. Test 2:—"I hereby certif that Mr. ———, whome I have known," &c., and "whome I highly respect," &c. Test 3:—"He is the son of a very respectable family and has born the highest character," &c.

—A case was recently decided by Mr. G. T. Denison, Police Magistrate of Toronto, which is of importance to the teachers of the whole province of Ontario. There is, unfortunately, a clsss of men in nearly every community who speak and act towards teachers as though they were persons without rights, and fit objects on whom to vent unlimited amounts of ill-natured abuse. With a view of teaching a lesson to one of these, who had used abusive language towards one of the female teachers on their staff, the Committee on School Management of the Toronto School Board advised his prosecution, not to injure him, but that he and others might be taught not to interfere with teachers in the discharge of their duties. The magistrate imposed a fine of one dollar and costs on the offender, and bound him to provide sureties that he would keep the peace for one year. It is time parents learned that they cannot with impunity disturb a school while in session. They have a right to go to the school as visitors, and as such every right-minded and properly qualified teacher will welcome them. They have no legal claim upon the teacher's attention, however, during school hours, and they are certainly not justified either by politeness or law in disturbing a class by an unmannerly attack on the teacher.

—We have received the tenth Semi-annual Circular (or Report) of Dr. Rand, Chief Superintendent of Schools in New Brunswick. It contains a considerable amount of statistical matter, examination questions, official notices, &c. The notes on Canadian History, prepared by Herbert C. Creed, A.M., are very concise and well arranged. The most valuable features of the circular are the reports of the Provincial and County Institutes. Many of the papers read at them are given in full. They are thoughtful discussions of leading educational questions, and we have obtained permission to publish some of them for the benefit of the readers of the JOURNAL.

—The last quarterly report of Dr. Harris contains the following statistical statement regarding the public Kindergartens of St. Louis:—

"In the Kindergartens the number of paid teachers was 150; of unpaid teachers, 47; total, 197. The average number of pupils belonging was 4,503, of whom 2,718 were attendant on the primary school for half a day, and 1,785 attendant on the Kindergartens alone. The total number enrolled in the Kindergartens for the ten weeks was 5,838. The number of Kindergartens was 52—counting each morning and each afternoon separately."

—Dr. Harris has given notice to the School Board of St. Louis that he will not be a candidate for re-election in May next. This will be a loss to St. Louis, and will be of serious import to the profession throughout America, if he retires from the field of education. During the twelve years of his inspectoral work the pupils of St. Louis Public Schools have increased in number from 15,000 to 50,000.

THE PENMAN'S ART JOURNAL,

Whose prospectus appears in our advertising columns, is one of our most interesting and valuable exchanges, and one which we can earnestly commend to all who have to do with penmanship, either as teachers, pupils, or as professional pen artists. It is conducted by Prof. D. T. Ames, who has long been recognized as the leading pen artist of America. His compendium of "Practical and Ornamental Penmanship" is the most comprehensive and complete handbook in the Penman's art we have ever examined. Prof. Ames' great experience and skill, as author and teacher of penmanship, is conspicuously manifest through the columns of his Journal.

We are also in receipt of a copy of the Lord's Prayer, which is given as a premium to each subscriber. It is indeed a rare gem of pen art, and a valuable picture.

Contributions and Correspondence.

EDUCATION AT THE ANTIPODES.

BY J. GEORGE HODGINS, LL.D., F.R.G.S., DEPUTY MINISTER OF EDUCATION, TORONTO.

NO. III.—CONCLUDED.

New South Wales, the oldest colony in Australia, contains an area of 323,500 square miles, and has a population of about 520,000. The system of elementary education in this colony is under the direction of a Council of Education consisting of five members—three of whom are Knights, and four are members of either branch of the Legislature. The Council has been in existence twelve years. There are 1,117 schools under its control—561 are "public," 266 "provisional," 112 "half time," and 178 "denominational." The pupils attending these schools are as follows: 71,794 at the "public," 8,707 at the "provisional," 2,213 at the "half time," and 34,538 at the "denominational" schools; total, 117,252. No explanation is given of the terms "provisional" and "half time," but from the context it may be assumed that "provisional" schools are those established in sparse settlements, and "half time" schools are those designed for young children. The "denominational" schools are those under the control of the Church of England, Church of Rome, Presbyterians and Methodists. The expenditure on behalf of the schools under the control of the Council was $1,384,703; fees, $327,747; total, $1,712,450. The expenses of the Education Office were $47,063; of inspection, $60,731; training teachers, $49,978. The salaries of teachers are fixed at the following scale: Those holding first-class certificates, grade A, $1,020; grade B, $960; second-class, grade A, $840; grade B, $780; third-class, grade A, $660; grade B, $600; grade C, $540. To this scale is appended the following singular statement: The salaries of unmarried male teachers, married teachers not assisted by their wives, and female teachers in charge of schools, will be $60 per annum less than the foregoing rates. The Council however state, in any public school where no residence is provided, an allowance for rent will be made to the teacher in charge. This is an excellent provision.

The two weak points of the system are stated to be "non-attendance of pupils" and the "want of efficient local supervision." To remedy the former, the Council issued a circular to teachers, "suggesting that they should, by personal interviews with parents, or by other means in their power, inquire into the causes of non-attendance of children, and use every possible exertion to bring absentees to school." The report states that "the teachers, as a body, carried out the suggestions of the circular with commendable zeal. . . . Moreover, the circular was found to produce a useful effect in another way. The teachers, by personal inquiry, made themselves acquainted with the views and feelings of the people upon the subject of education. . . . Some valuable information has thus been elicited," which it is proposed to turn to practical account. Apart from the special object here stated, the visits of teachers to the parents cannot fail to have a beneficial effect on the discipline and educational progress of the schools. We would therefore strongly commend the practice. The second point of weakness mentioned is the lack of school supervision by the local boards and trustees. The visits of inspectors are not sufficient to counteract the ill-effects of this local supineness.

Tasmania.—This small colony embraces 26,215 square miles, and contains a population of about 110,000. The schools in Tasmania have been managed by a Board of Education since 1863. There were 165 schools in operation in 1878, with a nominal attendance of 12,453. The average attendance, however, was only 6,032, or not one-half. The expenditures on behalf of education amounted to $132,400, divided as follows: Salaries of teachers and other expenses, $105,000; buildings, $12,800; exhibitions of $25, $50, and $100 each, $4,080; night schools, $1,290; secretary, inspectors, &c., $9,230. About $1,000 are paid to truant officers.

One feature of the Tasmanian system of education is the establishment of exhibitions and scholarships for pupils in the public and superior schools. These exhibitions and scholarships are conferred upon pupils passing successfully from the public to the superior schools, and from the latter to the universities. Their values vary from $25, $50 and $100, to $1,000 per annum. The latter are conferred upon "Tasmanian scholars," and are designed to defray their expenses at the English universities. Two are conferred each year, and are tenable for four years. In addition to these bursaries, there are medals and prizes conferred upon successful candidates for the degree of "Associate of Arts."

THE SCHOOLS OF ANCIENT GREECE AND ROME.

BY J. A. CULHAM, B.A.

Delivered to the Students of Pickering College.

(CONCLUDED)

Roman children, like the Grecian, passed their early years under the mother's guardianship, carefully secluded from all associations that might render them in the least un-Roman. Only those of the slaves who were possessed of education were allowed to converse in their presence, lest the pure Roman dialect might become tainted: the untaught tongue of a Gallic slave would corrupt the Roman child, as constant contact with the brogue of a Milesian broadens the pure accent of an English boy. About the sixth year both boys and girls were sent to school. The Roman boy was not banished from his mother's side, and separated from the companionship of his sisters; but, by new ties, new friendships, he was gradually weaned from the tender attachments of the nursery. The separate education of the sexes began a year or two later. I am sorry not to be able to give as full an account of the Roman ladies' schools as the interest of the subject demands. That they were educated, and that they occupied a much higher position, socially, than their Grecian sisters, there is no doubt. The wifely devotion of Fulvia, the accomplishments and virtues of Cornelia, and the wide-reaching influence of Aggrippina, prove the fact; but no ray of light is cast on the educational system under which the characters of these women were formed. The recognized equality of the sex alone would go far toward imparting an education, in allowing them to listen to, and take part in, the discussions of their fathers and brothers and husbands. Then, too, they could read; and, very probably, they had as pleasing anticipations of new publications of their favorite authors, as the average modern young lady has of the next number of a serial that will contain something fresh from the pen of her favorite. We miss female writers among the Romans. Greece had her sweet-voiced Sappho, and France her Madame de Staël; and the amount of English literature of all kinds contributed by women is enormous. Rome, however, here modestly retires. I do not know that an explanation of the fact has been attempted. It was not, at least, due to the modesty of the sex, nor to their want of spirit; neither can we say that it arose from the scarcity of women at Rome; for we find a law in force in the time of Augustus inflicting a fine on bachelors beyond a certain age, for the purpose of lessening the number of that useful but much-ridiculed class, which has a few representaives in our own time. Perhaps the explanation may be sought in this fact: a writer to produce anything that will resist the wear of centuries must have read and studied; and unremitting application and concentration of thought was not to be expected from women whose fickleness and love of pleasure and excitement have passed into a proverb. I must not pass from this subject without attempting to counteract a prejudice which may have arisen in favor of the Romans, on comparison of their treatment of the gentler sex with that of the Greeks; and I warn you to be chary of championing the system of the former without careful consideration.

To return to the education of the boys. The pedagogue system was not in vogue. Slaves carried the books of their young masters to and from school; but no authority was given them to correct the faults of their charges. Reading and arithmetic were taught in almost the same way as in Greece. For writing exercise, tablets of wood or ivory, or some such substance, coated with wax, were in use. They wrote on these with a pointed instrument called a *stylus*, whence our word *style*. Papyrus and parchment, with liquid ink and reed pens, were also common. Horace gives a description of his school days. He writes: "My father was loth to send me to the school of Flavius, where big boys, the sons of important centurions, with their satchels hanging on their shoulders, used to go, taking their teacher's fee; but he bravely took his boy to Rome, to be taught those branches which the children of knights and senators are taught; and if any one had seen my clothes and slaves, he would have thought that my outfit was provided from the coffers of a long line of ancestors." To understand this, we must know something of the class distinctions that existed at Rome. A man was despised there, in the days of the Republic, unless he could boast of ancestors who had held some of the higher offices of State. Personal merit, in the case of other men, was required before they received any consideration. These prejudices, however, in the time of Horace, were growing weaker; Cicero could boast of no ancestry, and yet he was styled the "father of his country;" and Horace, the son of a provincial auctioneer or commission merchant, a freedman at that, stood high in the favor of Augustus. We can see then the strength of the paternal love that nerved the father's heart to give his son a liberal education at any cost. The school of Flavius was a poor provincial one; and in order to obtain the advantages of a better, Horace the younger must go to Rome, and run the risk of encountering the jeers and taunts of high-born Roman youths on account of his lower station; and the father's purse was drained to furnish the means of lessening, as far as possible, the social distance between the son and his school-mates. And Horace is not ungrateful for his father's watchful care: he speaks of him always with affection: and on his "*monumentum ære perennius*" he has inscribed a lesson, on which fathers and sons through all time may ponder with profit.

At this time the Greek language was studied and spoken by every well-educated Roman. It formed a part of the educational system at Rome, and a knowledge of it was indispensable to those who took a University course, *i.e.*, spent a year or two at the philosophical schools of Athens, which was still an educational centre. Greek masters were easily obtained; for Greece was at this time a Roman province, in the conquest of which many slaves were made, among whom were some possessed of considerable education. Under these masters Roman boys were introduced to the wide fields of knowledge opened to them in the literature of Greece. Philosophy had at this time become popular at Rome; and the tenets of the old Athenian schools were resurrected from the mass of criticism that had almost overwhelmed them. The writings of the Roman poets, moreover, could not be understood without some acquaintance with their Greek exemplars. So that profit, added to pleasure, gave great importance to the study of this language.

According to Horace, flogging was practised as a punishment at Rome. He has handed down to fame, by a stroke of his dry humor, Orbilius, one of his masters, to whom he applies the epithet *plagosus*—"the switch bearing." The instruments of punishment were the *taws* and the ferule; and they were probably often deserved; for boys were mischievous then as now. Juvenal tells of a schoolboy's trick of making the eyes appear sore by anointing them with some kind of oil, and thereby shirking his part of reciting "The Death of Cato" at an exhibition given in his school.

Private tutors were frequently employed by wealthy Romans, more especially for teaching special branches, as Oratory and Music. The position of these tutors was not a sinecure. They were regarded, by a family of boys who had no love for study, as a common enemy; and it is well known what a burden a teacher's life can be made to him by a few refractory pupils.

The public schools were most probably closed at Rome for a summer vacation, though the question is a disputed one. The great number of State festivals, both at Athens and Rome, would dispense with any such vacations as are allowed in our schools; and we can easily imagine that occasional holidays were granted to the boys, who appreciated them as boys do now—not because of any definite

sense of pleasure derived from them, but from the fact that boys have a longing for freedom without knowing what it means.

Prizes for good conduct or excellence of work are rarely mentioned. They may have been given regularly, but it is not probable that they were, for the State did not provide for them, and the pay of the masters was too small to afford them.

Music was not an indispensable part of a Roman's education. It did not at Rome, as in Greece, constitute a leading feature in their festivals and their banquets. The pride and vanity of a victorious general were more flattered by a magnificent triumph, which satisfied the Roman's love of display, than by a song of victory in his honor. The harp and the flute were used, indeed; but their gentle strains had no such charm as the clanging war-horn. The Roman dramas were shorn of the choruses that were indispensable to the drama of the Golden Age of Greek literature; a substantial prize was the object of the Roman athlete's envy rather than the laureled chaplet, the prize in the Greek contests. Hence, music was neglected at Rome: the charms of the soothing art were too subtle to influence the minds of a nation whose business was war.

The university life of the Roman youth resembles, in some respects, that of modern times. It consisted in passing a year or two in travel, the greater part of which was spent at Athens, that still, in philosophy, literature, and art, reared her head from amid the ruins of fallen Greece. Many of that country's philosophers, poets, and statesmen were taken to Rome as hostages; many, whose hatred of a foreign yoke forbade them to be witnesses of their country's disgrace, sought homes among the colonies which their ancestors had planted in the days of Greece's prosperity; but there still remained a sufficient number at Athens to retain for her the title of mistress of the world in intellectual culture. The Roman youth, therefore, flocked to her schools—some, to free themselves from the restraints of home, and find companions in dissipation, as many English youths of modern times resort to the Continent in order to free their fathers from an increase of personal responsibility, and return morally and physically ruined; others went for profit. They recognized the fact that the calm retirement, the holy air, that lingered around the temples and groves of Athens, the teachings of her philosophers, whom old associations still bound to the birthplace of their doctrines, gave ripeness of judgment, strength of character, steadiness of purpose, and independence of thought. Here, too, life-friendships were formed, as in the case of Cicero and Atticus, the former of whom, in his dialogues, constantly alludes to scenes in the city, and conversations held there, that show the depth of the impression made on his mind by his university life.

The development of the body was not so systematic at Rome as at Athens. The more violent exercises, as wrestling and boxing, were left principally to professional athletes. The *Campus Martius* was the lounging place of the Roman youth, whom laziness and the luxury of the baths did not prevent from taking open air exercise; but we miss the activity and system of the Atheniæ Gymnasia. The principal difference between the two nations in this respect lay in this fact: the Greeks aimed at the perfection of the whole, by making individuals perfect, as a result of which we find the Greeks models of physical development, while the Romans neglected individual training, aiming rather at a systematic whole; and this system is especially exemplified in the discipline of the Roman army, in which the skill of the general and the confidence of his soldiers were pledges of success rather than individual bravary. After the introduction of mercenary soldiers in Roman warfare, the Roman youth, untrained in the exercises of the Gymnasia, gave themselves up more to the pleasures of the gaming tables and the baths; and the neglect and abuse of the laws of health that followed was one of the causes of the nation's downfall.

I have attempted to give a sketch of the educational systems of the two greatest nations of antiquity. They differ to some extent in details; but the principal difference, as I have attempted to show, is in the ends they had in view in the education of their youth. Greece had the one object of making her sons Greeks—descendants worthy of their fathers who fought at Marathon, trained in the qualities of self-denial and prudence, and fitted either to command or obey. Rome, on the other hand, educated her sons in an aimless kind of way—as a matter of duty, which, as soon as it was performed, afforded a great relief. There is something very modern in this: a certain class, in our own day, send their children to school for a few months each year for a few years, and then consider their duty done, as far at least as education is concerned; and they complain loudly that there are legislative enactments for compulsory education. Their number is, however, fortunately for the country and happily for the children, growing fewer. It is not a mere guess at truth to say that the wide difference in the characters of these two nations, alike in origin, under the same climatic influences, and with the same form of government, which may be called a *limited democracy*, is largely due to the difference in their Educational systems. Their histories are a light to guide and warn: we can follow where they succeeded, and avoid the breakers that wrecked them. Above all, in these days of socialism and its kindred evils, we can take an example from the system of Greece, and in the school-room instil a love of country—make patriotism, not a general virtue, but a personal duty. By this means—for the principle is right and sound, and the judgment of riper years will not find reason to depart from it—the storms of civil discord that now sweep over nations, and make thrones to totter, will grow calm, and give way to a millennial peace. Far in the future, when the death-knell shall have tolled a mournful farewell over our English language, and its urn shall have been placed side by side with those of Greece and Rome; when a new race, speaking a strange tongue, shall inhabit the earth, some antiquarian, perchance, writing on the educational systems of the Ancients, shall disinter blue-book on blue-book, educational reports, ministerial recommendations and the like—what discoveries will he make! He will find how many of Rome's and England's free-born sons were little higher than the brutes—millions knowing no other pleasures than those of sense; he will read that Greece was the acknowledged mother of literature, philosophy and art, and that her popular enjoyments combined the arts which charmed the senses and trained the intellect; and he will consider why so few years mark the length of Greece's rule, while the eagles of Rome floated victorious, decade on decade, through a monarchy, a republic, and an empire; and while, for centuries, England, old Ocean's favorite child, has sat on her island throne, fearlessly wielding the destinies of the world. I leave him to consider.

THE STUDY OF HISTORY.

BY T. O'HAGAN, BELLEVILLE.

There are few subjects of greater importance than that of history. If the proper study of mankind be man, then it behoves us to pay much attention to the study of history, which has for its object the vindication of man. History means well-nigh everything. It is philosophy, it is poetry, it is literature. Is not history a record of every subject? Is not the advancement of mathematics a history in itself? That Newton discovered the Binomial Theorem s a fact which comes within the realm of history. History is then a record of all that has transpired in the family of mankind. It is

philosophy teaching by experience. By means of it we pierce our way through the vistas of the past and look up the aisles of the future, we hold communion with the dead, and sit in council with an offspring yet buried in the womb of time. How rapid is the winged flight of imagination! Yet the foot of history is as fleet. With what celerity does the page of history picture to our minds the sovereignty of the Garden of Eden in its primitive greatness! We have scarcely beheld Noah and his family enter the ark until we behold the arc of God's covenant span the heavens. Thus history hurries us along through the different periods of the world's existence. We accompany Moses through the promised land, and stand with him upon Mount Sinai as he receives the Divine commands. The spirit of history bears us along through the ages of empires—

"Greece, Rome, Carthage, where are they?"

Each nation rises before us, then fades away like the mist before the morning sun. Each sovereign rules his hour and then departs, bequeathing his sceptre to another. There is no interregnum in the great sovereignty of the world. The deeds of warriors are scanned and then surpassed. Each age is arrayed in more glistening armour. The sword gleams still more brightly in the hour of danger, and peace reigns more supremely when it comes. Conquest and loss, hope and fear, joy and mourning ring through the universe, and the heart of mankind beats and throbs to its varied and never-ceasing measure. Yes, the true import of history is found in the government of thought and action. He who would tell us only of camps and courts, and the drilling and killing of soldiers, does not merit the title of historian. He forgets that the great and mighty tide of thought and action is rolling through a world of existence, and it is this tide of thought and action that shapes and influences a nation. There must then be a real spirit in history through which its characters live and move and have their being. "History," says Carlyle, "is a mighty drama enacted on the theatre of Infinitude, with suns for lamps and eternity as a background—whose author is God, and whose purport and thousand-fold moral leads up to the Throne of God." Here we have a sublime definition of history. Let us place it side by side with that of Voltaire, who said that history was merely a parcel of tricks that the historians played with the dead. How can we expect to understand the characters of those who lived two thousand years ago, when many of us are at a loss to understand ourselves. This, however, need not imply that the historian should be a character trickster. And what did Napoleon define history to be? He said it was simply fiction agreed upon. With fiction we always associate the idea of unreality. Now truth is real, and real history is truth; therefore history is neither fiction nor unreality. History by some is considered to be merely story-telling. This definition would hold good were there nothing else in the subject but narration. Nearly every person is more or less a story-teller, and consequently an historian. Yes, such a definition may pass muster with children who are more interested in the adventures of a Robinson Crusoe or the astounding feats of Jack the Giant Killer, than they are in the growth and development of a nation; but it can never be accepted as the real and true import of the term history. Froude says that history is like a child's box of letters, with which we can spell any word we please. We have only, says this historian, to pick out such letters as we want, arrange them as we like, and say nothing about those which do not suit our purpose. It is to be feared that the great English historian has too closely followed his definition. Half of our histories are but mere romances, containing neither spirit nor lore. To turn their pages would be but a useless task. They do not speak of the inward life of a nation. The kings pass before you just as in some play toy, distinguished from each other only by the armor on their masks. Certain it is that history is a book with seven seals, and what we call the spirit of the past ages is but the spirit of this or that worthy gentleman in whose mind those ages are reflected. I remember having read some time ago an article in the "Canadian Monthly" entitled "A Quarrel with the Nineteenth Century," in which the writer complained of the difficulty of reaching truths through the medium of history. Well, it is a task, I must confess. Like our newspapers, on political subjects each has a mission to fulfil, and it is a question if all our histories together state certain facts intrinsically right. Each historian has his idol, before whom he bows down and offers incense. Read one history and you will learn that Queen Elizabeth was a most amiable personage, and fully justified in putting her cousin, Mary Queen of Scots, to death; while another represents her as a cruel-hearted and tyrannical monster. Even Henry the Eighth, ensconced within the circle of his six wives, comes in for a share of fulsome praise at the hands of James Anthony Froude; while Macaulay, who was well-nigh infallible as an historian, and could not write partially forsooth, wades knee deep in blood through the massacre of Glencoe in order to exonerate his favorite hero, William the Third, from all blame in the matter. And thus goes on the warring of historians, with truth and fiction I suppose arrayed on both sides. There is one thing certain, that we look for something better in histories than the mere chronicling of events. It is of little importance to know that the Magna Charta was signed by King John at Runnymede, A.D. 1215, if we do not know that it was the great bulwark of English liberty. The mere fact that we dined yesterday at precisely 12 o'clock, is not nearly so important to the welfare of our bodies as the food which we disposed of during the event. The life-blood of a nation is not nourished by dry facts and dates. The inward condition of life and conscious aim of mankind constitute much of the reality of history. It very often happens that we are wont to consider events ushered in by the thundering of cannon, the war of musketry and the bloody carnage of the battle-field, as the great landmarks of history. This is a mistake. "When the oak tree is felled," says Carlyle, "the whole forest echoes with it; but a hundred acorns are planted silently by some unnoticed breeze. Battles and war tumults, which for the time din every ear and with joy or terror intoxicate every heart, pass away like tavern brawls; except some few Marathons and Morgartens are remembered by accident, not by desert." History has been considered to be the written and verbal message which all mankind delivers to man. It is the communication which the past can have with the present, —the distant with what is here. "The perfect man in history," says Carlyle "would be he who understood and saw and knew within himself all that the whole family of Adam had hitherto been or done." Such a person we do no not expect to find; hence we must bear with the imperfections of history. Let us read the premises of history and draw our own conclusions, not follow the coloring of the historian; but view facts through the lens of our own minds. And now I come to the question, Is history a Science? My reply is, yes. A subject is said to have entered the scientific stage when phenomena are no longer isolated experiences, but appear in connection and order; when, after certain antecedents, certain consequences are uniformly seen to follow; and when, with facts collected, we form a basis by which we can, in some degree, foresee the future. But we must ever remember that there is something else in history besidet the marvellous and the wonderful; that the true purport of history is not to amuse, but to instruct. It is the great emporium of knowledge, in which all can be shareholders. We can all sit at the footstool of history and become learned. In former days, the office of historian belonged, in a great measure, to the minstrel,—

"The last of all the bards was he
That sang of border chivalry."

But the history doled out by the minstrel was only the history of song. We feel, however, that we are now touching greater years; and as the inquiring nineteenth century speeds on its way, we begin to study more and more the true philosophy of history. Gibbon believed that the era of conquerors had gone; but could he have communed with the spirit which has cried "havoc and let slip the dogs of war," he would have believed that such an era was only being inaugurated. The blood-stained clouds which had floated above Sadowa and Woerth have scarcely passed away ere the heart of the whole Christian world mourns for a royal death in Zululand.

And now a word touching the true spirit of history. To me it would appear that this is often lost sight of. Instead of counting the followers of Mahomet, we should rather inquire what was in the character of the people which enabled Mahomet to work upon them,—their existing beliefs, their existing moral and political condiiion. It is not enough that we should know princes and crowned heads of Europe who enrolled themselves under the banner of the cross in the great movement of the Crusades; the effect of the great military expedition upon European civilization and commerce is of far more paramount importance to the student of real history. With respect to methods of teaching history, let us take a lesson from the pioneers of Canadian civilization, who, in piercing the heart of the virgin forests of this land, first blazed a large tree here and there in order that they might not lose their way in the interminable mazes of the forest. In like manner let us be guided through the great labyrinth of history by great and leading facts, for we are indeed pioneers pushing our way through the remote ages of the past, and our destination is that era coeval with Creation, when the garden of Eden formed the great sovereignty of the world, and the divine right of kings belonged to the first subject and King Adam. We should also impress upon our pupils the fact that the reality of history consists in the essence of biographies which contain all the greatness of mankind—a greatness worthy of our young men and women who have for their object nobility of character, and who desire to lead great and good lives.

THE "BONUS" TO COLLEGIATE INSTITUTES.

BY A HEAD MASTER.

Some four years ago the Intermediate Examination was introduced into the High Schools of the Province, and the mode of distributing the High School grant was changed.

Previously to this, the amount of grant depended upon the number that each head master could crowd into his school of those who had passed the entrance examination. Before that again, it depended upon the number that could be induced to study Latin. In both cases the principle was wrong. In the former case, the tendency and the result was to admit large numbers of unprepared pupils, and convert the High Schools into inferior Public Schools; in the latter, every pupil that could be got to do it was compelled to waste his time in acquiring the merest rudiments of Latin grammar, beyond which a large proportion never proceeded, and of which they made no use. After many years of this sort of thing, our educationalists and educational authorities grew wiser, and established the system of "payment by results." Under this mode of distribution, about two-thirds of the whole amount is allotted on the principle of a fixed grant to each school, which prevents the extinction of smaller schools, and secures a fair amount of higher education in each county. The remaining third is distributed on the "payment by results" principle, as determined by the Intermediate examination and the estimate of the High School Inspectors. Whatever may be the defects of the present system, there can be no doubt that it is an immense improvement on the former one; and now that the Intermediate is to be held but once a year, there are few that would like to see any further change at present. As to that portion allotted by the Inspectors, it is only right and proper that they should have the power to give additional effect to their inspection by allowing a limited portion of the grant. On the whole, then, the present system much surpasses the one it displaced.

A part of the old system, however, was retained in connection with the Collegiate Institutes. In order to encourage the cultivation of high scholarship in centres of population which might have the ability and inclination to supply the means of acquiring such, a special grant over and above the ordinary revenue of the High Schools was made on conditions which, in the main, were fair, but to one of which I take objection. It was made a *sine qua non* in the case of such institutions, that there should be an average of *sixty boys in Latin*. The aim in this was right enough, but our educational legislators do not seem to have realized that they were really retaining what had worked disastrously so far as genuine scholarship was concerned. No regard was had to either broad or deep scholarship. Of course it was supposed that if there were in any place that number studying Latin, both this subject itself would be pursued to it highest limit, and the kindred studies required to be taught with it, would also receive their share of attention. But those acquainted with the old system, which made the money grant dependent on the number in Latin, know how easy it was to crowd those into this study to whom it was of no benefit, inasmuch as they did not pursue it beyond the merest elements. If we take note of the relatively low position that some of the Collegiate Institutes have held for years, and the comparatively high position that many of the High Schools have secured—ranking above some of the Institutes, and on a par with most of them—there is *prima facie* evidence that the retention in the new system of this error in the old is not producing the best results, and that the time has come for a change.

It may be asked what we would propose instead of the present scheme. It may be said that it is an easy matter to make objections—to pull down; how do you propose to build up? Without at all wishing to thrust my views upon the Minister of Education, I would respectfully submit the following as an outline of what seems to me much more desirable conditions of allotting the special grant to Collegiate Institutes.

1st. Reduce the number of pupils required to take Latin to forty; and let it be the duty of the Inspectors to see to it that these are *bona fide* students of Latin, and that there is a reasonable prospect of their pursuing the study to a point that will be deemed satisfactory. To the old system of admitting pupils to the High Schools, and to the present condition of obtaining the special grant to Collegiate Institutes, the same evils attach. The tendency of both systems was, and is, to thrust into the study of Latin large numbers, merely for the purpose of obtaining the grant in each case, without asking the question whether they were or are likely ever to make anything out of it. In short, it is universally admitted that under the old system a large proportion of such pupils never got beyond the grammar, and a very imperfect knowledge of that. A little consideration will make it evident that, to a very large extent, it must be the same under the conditions that attach to the special grant system.

With the number of High Schools that exist in each county, it is scarcely possible for any centre of population under eight or ten thousand to furnish the required number of pupils, unless it hap-

pens to have become a large boarding-school centre, as Galt, for instance. With a less population than this, a varying but very considerable proportion of the Latin pupils will consist of young boys who are forced to take Latin merely to make up the number, and who will never pursue it to an extent to be of any real benefit to themselves; or of young men who come in from the country for six months or a year to fit themselves for passing the "Intermediate;" and who are, in like manner, forced to go in the ranks of the "humanitarians" whether they will or not. In short, the law as it now stands offers a direct premium to the lowest forms of scholarship, instead of to the highest;—so that while its letter may be carried out, certainly it is in direct opposition to its spirit and intention, which we suppose to be, to form centres of advanced education.

2nd. Let it be one of the conditions of obtaining the grant that there be an Upper School of, say, twenty to thirty of an average. The spirit and intention of the law would then be fully carried out. Instead of holding forth a money inducement to force on a fixed number of pupils doing the lowest work, the aim would be, throughout all the forms—the lowest as well as the highest—to produce thorough scholarship; as only in that way can an Upper School be founded and kept up. The influence of this would extend even to the entrance examination; for head masters will be forced to admit only those well qualified in order to supply good material for their lower forms.

The whole tendency of a change in this direction would be to raise the standard of admission, and to make and keep the scholarship high all through the course.

3rd. But I would not stop here. It might be possible to get the above mentioned average of Upper School attendance, and yet not produce the highest results. There might be a comparatively large attendance who would just pass the Intermediate and proceed no further; so that a Collegiate Institute might become only a mere wholesale manufactory for second-class teachers. Even this would be preferred to the mere "studying Latin" test. But it would not fulfil the obvious intention of the law in regard to these institutions, viz.: to produce the highest scholarship to be obtained in the Province short of the Universities. Combined with this requirement, therefore, there ought to be some regulation requiring the full round of Honor, Classics, Mathematics, and Modern Languages, to be steadily and continuously taught.

It is not necessary that all the work prescribed in these subjects be taught at the same time, but simply that there be classes in the Honor work in all the departments, commencing and prosecuting them up to matriculation; followed by other classes travelling over the same ground. A forced average attendance of sixty in Latin will not necessarily secure high attainment in Greek, Latin, French, German, Mathematics; but high scholarship in these subjects will greatly overbalance any deficiency in the numbers of those who can go through the declension of *penna*, or the conjugation of *amo*.

4th. In addition to the above essentials, it might be further required that Collegiate Institutes send up year by year a fixed number of candidates for matriculation at the Provincial University, the mere number each year not being of so much importance as the steady annual supply. We do not wish to draw any invidious distinction between the University and similar institutions; but we mention it because it is *national*, as are also the High Schools and Collegiate Institutes themselves; and at least no other University in the province possesses a higher standard of learning. This does not, of course, preclude it from preparing pupils for any examination whatever; but there ought to be, besides the reports of the Inspectors, some uniform standard by which to test results, and we do not know of any higher than an *honor* examination in the University.

Such, briefly, is an outline of what I would substitute for the present "Latin" condition of obtaining the special grant; with the other regulations as to masters, &c., I would not interfere. This plan would not have the tendency to unduly increase the number of Collegiate Institutes, as it would only be in localities where the people have a strong desire for higher education that it would be possible to establish and keep up such a high standard as that proposed. A few schools that have taken and held a high position ever since the establishment of the new system might make good their claim to the grant; but, on the other hand, we are convinced that some of the present institutions would have to use the spur to keep in line. No better stimulus could be applied to these institutions of learning than the change that we propose. We trust that it will commend itself to our educational authorities.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

APPROXIMATE SOLUTION OF EQUATIONS.

If two numbers, a and b, when substituted for x in $f(x)$, a rational integral expression, give results with contrary signs, one root at least of the equation $f(x)=0$ must lie between a and b. For since $f(a)$ and $f(b)$ have contrary signs, $f(x)$ for some value of x between a and b must vanish; such a value will be a root of $f(x)=0$, *i.e.*, one root at least of $f(x)=0$ lies between a and b.

We say one root at least, since several equal roots may exist between a and b. Moreover, as x changes from a to b, $f(x)$ may have changed signs several times, which would indicate the existence of several roots in the interval. It may happen, however, that something in the problem in the solution of which the equation arose, or something in the equation itself, indicates that but one root exists in the interval $(a.....b)$; we proceed to show how, in such a case, we may determine the root approximately.

Let a be less than b, and let them be consecutive numbers, so that $a+1=b$, and suppose $\frac{1}{y}$ to be the fraction which added to a will complete the root, so that y is greater than unity. Then $a+\frac{1}{y}$ substituted for x will make $f(x)$ vanish. Let this substitution be made; then clearing of fractions, we shall have an equation in y which has a root greater than unity, y being greater than unity. Let it be found on examination that this equation in y has a root between a' and b', and let $\frac{1}{z}$ be the fraction which when added to a' will complete the root, so that z is greater than unity. Then $a'+\frac{1}{z}$ substituted for y will make the equation in y vanish. Let this substitution be made; then clearing of fractions, we shall have an equation in z which has a root greater than unity, z being greater than unity. Let it be found on examination that this equation in z has a root between a'' and b'', and let $\frac{1}{w}$ be the fraction which when added to a'' will complete the root, so that w is greater than unity. Then $a''+\frac{1}{w}$ substituted for z will make the equation in z vanish. Let this substitution be made, and let the previously described operations be repeated. Then $x=a+\frac{1}{y}$;

$y=a'+\frac{1}{z}$; $z=a''+\frac{1}{w}$, &c.

Hence $x=a+\frac{1}{a'}+\frac{1}{a''}+\frac{1}{w}$,

or approximately, omitting the w,

$$x=\frac{a''(aa'+1)+a}{a''a'+1}.$$

By repeating the operations we may approximate with any degree of closeness to the value x, though the numerical labor of the operatives will continually increase.

Example: $x^3+10x^2+6x-120=0$.

When $x=2$, the left hand side becomes negative, and when $x=3$. positive. A root lies between 2 and 3. Let $x=2+\frac{1}{y}$, and substitute. Then

$$1+16y+58y^2-60y^3=0.$$

$y=1$, $y=2$ give contrary signs. Let $y=1+\frac{1}{z}$, and substitute. Then

$$-60-122z-48z^2+16z^3=0,$$

$z=4$, $z=5$ give contrary signs. Let $z=4+\frac{1}{w}$, and substitute. Then

$$16+144w+262w^2-292w^3=0.$$

and here $w=1$, $w=2$ give contrary signs.

Hence, approximately, $x=2+\frac{1}{1}+\frac{1}{4}+\frac{1}{1}$ $=2.833$.

To be certain that the third figure is correct we should have carried the operations one stage further, and if we still got for the first three decimals 833, we have sufficient evidence that the third figure is 3.

We are sure many of our readers, in applying their algebra to geometrical problems, have frequently encountered cubic and biquadratic equations and been unable to proceed. The above will often extricate them from such difficulties.

APPROXIMATE QUADRATURE OF THE CIRCLE.

The following mechanical quadrature (approximate) of the circle is given by P. E. Chase, LL.D., in the Proceedings of the American Philosophical Society:

Let AC ($=20$, say) be the diameter of the circle a straight line approximately equal to whose circumference it is required to find. From AC cut off $AB=3$. Draw AD at right angles to AC and $=9$. Join CD, and draw BE parallel to CD, meeting AD in E. Produce AC to X, making $AX=60$. Produce EA to Y, making $EY=20$. Then XY shall be approximately equal to the circumference of the circle whose diameter is AC. By calculation it may be easily shewn that $XY=3{\cdot}141585\ AC$, which is certainly sufficiently accurate for practical purposes. The method, requiring only a divided rule, a square, and parallel rulers, will be found useful in many mechanical operations.

SOLUTIONS OF PROBLEMS IN JANUARY NUMBER.

1. If O be the centre of the ball 18 inches in diameter, a point 9 inches above O will be the highest point of this ball above the floor. Let A, B, C be the centres of the other balls whose diameters are respectively 16, 20 and 23. Then the sides of the tetrahedron $OABC$ are known. Frost (Solid Geometry, §124) gives a relation between the four-point co-ordinates of a plane. Three of the co-ordinates are known, viz.: the perpendiculars from A, B, C on the floor, and from this relation the fourth co-ordinate, the perpendicular from O, may be found.

2. Let x, y be the co-ordinates of the officer at time t from starting, s the distance travelled by him in this time, the centre of the army being supposed to move along the axis of x. Then $s=7t$. Also, 1 being the radius of the circle

$$\{x-(3t+1)\}^2+y^2=1^2,$$

$$\therefore\ x-(\tfrac{3}{7}s+1)=\pm\sqrt{1-y^2},$$

$$\text{or } s=\tfrac{7}{3}[x-1\mp\sqrt{1-y^2}]\ldots\ldots(1).$$

$$\text{Also } s=\int\sqrt{1+\left(\frac{dy}{dx}\right)^2}dx\ldots\ldots(2).$$

Eliminating s from (1) and (2), we would then have the equation to the curve; and then, knowing x in terms of y, we could from (1) find s when $y=0$.

3. Let $u\left(=\frac{1}{r}\right)$, θ be the polar co-ordinates of the dog at time t, the centre of the circle being the pole, and a diameter through the point from which the dog starts being the initial line. The equation to the tangent to the curve in which the dog moves is

$$u'=u\cos(\theta'-\theta)+\frac{du}{d\theta}\sin(\theta'-\theta),\ldots\ldots(1).$$

And the dog's motion being always directed towards the rabbit, this tangent will always pass through the point $\left(a,\frac{50kt}{a}+\alpha,\right)$ where $a=$ radius of field, $50k=$ rate of motion of rabbit, and $\alpha=35°$. Hence, substituting in (1),

$$a=u\cos\left(\frac{50kt}{a}+\alpha-\theta\right)+\frac{du}{d\theta}\sin\left(\frac{50kt}{a}+\alpha-\theta\right)\ldots(2).$$

Also,

$$51kt=s=\int\sqrt{r^2+\left(\frac{dr}{d\theta}\right)^2}.d\theta=\int\frac{1}{u}\sqrt{u^2+\left(\frac{du}{d\theta}\right)^2}.d\theta\ \ldots\ (3)$$

From (2) and (3) t is to be eliminated; we would then have the equation to the curve in which the dog moves, and could then from (3) find s when $u=\frac{1}{a}$.

4. The solution of this may be effected by using the geometrical construction given in the appendix to Todhunter's Euclid, p. 305, *et ante*.

5. Let V be the quantity of water in the tub at time t, dV' the quantity of water that comes from the spout in time dt, of which let dV be the quantity that remains in the tub. On mixing there will be

$$\frac{40}{40+dV'}(V+dV')$$

gallons of water in the tub. Hence quantity of water added

$$=\frac{40}{40+dV'}(V+dV')-V$$

$$=\frac{(40-V)dV'}{40+dV'}$$

Hence

$$\frac{(40-V)dV'}{40+dV'}\ \text{or}\ \frac{(40-V)dV'}{40}=dV.$$

$$\therefore\ \frac{dV}{40-V}=\frac{1}{40}dV'=\frac{3}{40}dt.$$

Integrating,

$$-\log(40-V)=\frac{3}{40}t+C;$$

$$\therefore\ -\log 40=0+C:$$

$$\therefore\ \log\frac{40}{40-V}=\frac{3}{40}t$$

$$\text{and } V=40\left(1-e^{-\frac{3}{40}t}\right);$$

giving the quantity of water in the vessel at any time t.

We are asked for the solution of the following:

A contractor was to receive a certain price for a piece of work. If he employed a certain company of boys he would have to give them $\frac{1}{3}$ of the contract price; but if he employed a certain company of men he would have to give them $\frac{2}{3}$ of the contract price. To facilitate the work he employed both companies, and he received $2,000 less than he would have received had he employed the boys only. Find the contract price.

The question is somewhat ambiguous, and it will readily be seen that under certain interpretations the solution becomes indeterminate. We shall, however, take the following, we think, reasonable view of the problem. The term "contract" implies that the work done is to be of a certain standard of excellence, whoever does it, and that it is to be done in a certain time. We infer, consequently, that work done by the company of boys is equally good and as quickly done as that performed by the men, and that the difference in price of the labor arises from the not unusual cause that boy labor is cheaper than man labor. With this interpretation the solution is extremely simple. The companies working together do equal quantities of the work, for which, however, the men receive twice as much as the boys.

Hence $\frac{1}{3}$ of contract price = price charged by boys.
$\frac{1}{2}$ of $\frac{1}{3}$ of contract price + $\frac{1}{2}$ of $\frac{2}{3}$ of contract price = price charged by both. $\therefore$ $\frac{1}{3}$ of contract price = $2,000, or contract price = $12,000.

Practical Department.

THE VALUE OF PICTORIAL ILLUSTRATIONS IN SCHOOL INSTRUCTION.

BY H. C. CREED, A.M., INSTRUCTOR IN THE NEW BRUNSWICK NORMAL SCHOOL.

The representation of the forms of things is one of the earliest performances of juvenile humanity. This holds true of collective humanity as well as of individuals. Rude, uncivilized races record their deeds and communicate their messages in the natural language of pictures, of which the sculptured hieroglyphics of Egypt and Syria and the birch-bark drawings of the North American Indians are familiar examples. So, also, children very early manifest a disposition to imitate, with a pencil, the outlines of objects about them, and also a great fondness for looking at pictures. It is obvious, therefore, that pictures must afford a natural means of reaching the intellect and the sympathies of the child, and if of the child then also of the person of any age whose faculties have had a true and natural development.

One of the earliest attempts to use pictures as a direct and systematic means of instructing children was that made by Comenius in his work entitled "*Orbis Sensualium Pictus*" (The World of Visible Objects Portrayed), published in 1657. Both the quality of the pictures available for the purpose, and the extent of their use, have progressed very greatly since that time, but have by no means reached their limit as yet.

The usefulness of pictures in a general way is seen by comparing the keenness of observation, the general intelligence, the accuracy of knowledge exhibited by children brought up in the midst of an abundance of wholsesome illustrated literature, with the comparative dullness of vision and narrowness of information shown by those who have not been so privileged. But, to come to the particular subject of this paper, I remark that the pictorial art may be made exceedingly helpful to teachers in a variety of ways.

I. Pictures are of service as *an auxiliary means of imparting information, and as an aid in explanation.* If correctly made, they usually give a better idea of the form and appearance of an object or the aspect of a place than any unaided description could do. Whether as forming the basis of lessons on particular objects, persons or places, or as illustrating incidental references made in the course of lessons, they are invaluable. Their usefulness is much wider than the use actually made of them in our schools would indicate; and, indeed, its only necessary limitations are these two: first, the fact that the object itself is always better than a picture of it; and, second, the fact that pictures are not always so drawn as to convey a true conception of that which they represent.

We all know how extensively pictorial illustrations are employed in the best works of the various branches of natural science. Treatises on botany or zoology, geology or astronomy, animal physiology, chemistry or physiography, would be not only unattractive, but comparatively unserviceable without the diagrams, etc., by which they are commonly elucidated. In mineralogy, anthropology and meteorology, in mechanics, hydrostatics and hydraulics, in the scientific treatment of sound, light, heat, electricity, etc., the aid of pictures is almost indispensable. But it is not only in the prosecution of these advanced studies that we can take advantage of the pictorial art; it is equally applicable to a wide range of elementary school work, especially in geography, in history, and in lessons on common things, when the animal or the plant, the costume or the person, the product or other article, cannot conveniently be, itself, exhibited in the school-room.

Illustrated manuals of certain subjects have been provided by the Board of Education for use in the schools of New Brunswick, and many teachers, no doubt, fully appreciate the benefit thus conferred, and take every possible advantage of it in their daily work. Some of us, however, seem to ignore the excellent woodcuts with which our reading books and geographies are embellished, or, at any rate, act as though these were intended merely for adornment or for the filling up of space. Few of us, perhaps, have really sought to get out of these illustrations all the good there is in them. What better introduction can we make to many a reading lesson than a study of the accompanying illustration, or of a suitable picture taken from our portfolio, or skilfully sketched upon the blackboard? How much more intimate a knowledge of a country, its people, its products, may be gained if we introduce a number of well-selected pictures to supplement the printed text. Suppose we are conducting a class through the geography of India, for example. We may exhibit sketches of Bombay and Benares, of the Ganges and the jungle, of Brahmins and Banyans, of Sikhs and Cingalese, of crocodiles and cocoa-nut palms. And who will deny that the trouble or even expense incurred will be more than repaid by the lively interest awakened in the lesson and the vivid conceptions imparted? Lessons in history, also, will be rendered doubly interesting and valuable by such illustrations as may readily be obtained. The painstaking teacher may gradually accumulate a stock of views of historic localities, battle scenes, portraits of celebrities, representations of ancient costumes and modes of life, with other matters of historic interest, which will be of incalculable service in the class.

I have said that pictures are often of great assistance in explanation as well as description. In both these connections their usefulness consists partly in the fact that they save words. Teachers are obliged to use the voice a great deal; so that whatever will serve to accomplish the desired result without expenditure of breath (as we express it), is valuable as a conservator of energy.

But, while saving voice-power, the use of pictorial illustrations also economizes time, since the trained eye will gather from a good picture, in one minute, more than it or the ear could take in from words in ten times as long.

It may here be observed that for purposes of instruction, especially with children, pictures should be simple, presenting but few objects at a time, and these, for the most part, so chosen as to aid in the process of comparison by suggesting resemblances and differences.

II. But it is not only as a means of instruction that pictures are valuable: they are of no small importance *as an educational instrument.*

Many of the benefits of object-teaching may be attained through picture-study; that is to say, in very many cases the flat representation of objects may be used for the objects themselves. Of course, in doing so, the teacher must not lose sight of the fact that every such representation is, to some extent, imperfect. It exhibits only one phase of an object. The full form, the color, the texture, the tactual qualities may all fail to be expressed in the picture, while at the same time a good notion of the thing in other respects may be conveyed.

As to the value and the methods of object-teaching, it is, of course, unnecessary for me here to speak. Pestalozzi, in his work entitled *Wie Gertrud ihre Kinder lehrt*, affirms that the "culture of the outer and inner senses is the absolute foundation of all knowledge—the first and highest principle of instruction." But there is more in it than that: the cultivation of the faculties of sense-perception and of conception, by means of object-teaching, accompanied, as it may be, to the fullest extent, with exercises in comparing, generalizing and judging, constitutes a most important part of that mental culture and discipline which every school should afford. Moreover, a well-conducted course of object-lessons will always have, as one of its elements, a certain amount of exercise in the accurate expression of ideas on the part of the pupil, which will tend not only to enrich his vocabulary, but also to train him in the art of correct and fluent speaking.

Now, all these advantages are attainable as truly, though not as fully, by means of picture-lessons as by means of object-lessons proper. Frequently the desired object or article cannot be had, but a picture of it may be shown, and will form a most serviceable substitute. Always, however, where a picture is used for this purpose—as of an animal, a rare or foreign flower or plant or material—care should be taken to secure a faithful copy of the original, as nearly as possible of the natural size and color. A good picture of a leopard or a pelican, a paddy-field or a coal-mine, a Zulu and an Esquimaux, a volcanic eruption or a coral island, may be made the subject of an exceedingly interesting and instructive lesson; and this may be so conducted as to bring into exercise the pupil's powers of observation, conception, comparison, judgment and verbal expression. Of such exercise there cannot be too much. We have all read or heard more or less of "the development theory," and wise men differ as to its accordance with the facts of nature and revelation: development by exercise, however, is no theory, but what Elihu Burritt called "a tried, practical fact."

Again, pictures may be made the means of cultivating the taste or the æsthetic faculty. The importance of this need not here be argued. Says a recent writer, "However well the intellect, the will, or the conscience of an individual may have been trained, if æsthetic culture is wanting, he must continue rude and unrefined." In a great variety of forms, pictures may be made to contribute to this end in the school-room. Pupils should be encouraged to pass judgment upon pictures in respect to beauty of outline or of color, symmetry and proportion of parts, correctness of light and shade, character of general effect, and so forth. Such exercises will be the proper complement of the instruction and practice in Drawing provided in the curriculum.

Here it may be remarked in passing that care should always be taken by teachers (and by parents and others as well) that the children are prevented as much as possible from seeing bad pictures. From pictures of what is vicious of course their eyes should be jealously guarded; but also they should not become familiar with crude or badly executed prints, and glaring daubs of colour under the name of paintings. By such means the taste is vitiated, the mediocre comes to be esteemed excellent, and the superior is not appreciated. The cultivation of a correct taste in art among the people is a matter of great practical and economic moment. Ruskin says that much harm has been done, not only "by forms of art definitely addressed to depraved tastes," but also by pictures that are simply not good enough,—"which weary the mind by redundant quantity of monotonous average excellence, and diminish or destroy its power of accurate attention to work of a higher order."

III. A third aspect in which the subject may be viewed is the value of pictures *in adding to the interest of school work*, and thereby promoting good discipline, as indeed all that is good and useful in the school.

Let the walls be adorned with a few well-selected and neatly framed prints or chromos (or oil paintings, if really meritorious), placed there, not only for decoration but as illustrations of some topics of instruction; let the effect be heightened by the introduction of a few beautiful plants in pots, and a bouquet of flowers on the Teacher's table; and the pupils will soon come to take a pride in their school-room, in their Teacher, and then in themselves.

The practice of illustrating ordinary lessons by reference to pictures, whenever these are suitable for the purpose, will also serve (as already suggested) to fix the attention of the pupils, and to make the lessons much more interesting than they would otherwise be. Children generally are fond of pictures, and always derive pleasure from that which gives them clear and vivid conceptions of things. How much the school is benefitted by anything that tends to make school-life pleasant, I shall leave my hearers to compute.

I have spoken of the use of pictures in the school-room (1) as a means of imparting information, (2) as a means of exercising and training the mental faculties, and (3) as a source of pleasure and a promoter of the general well-being of the school. It only remains for me to notice briefly the various kinds and forms of pictorial illustration that are available for school purposes.

Of course the most obvious are the woodcuts which form so pleasing a feature of many modern school-books,—the artistic execution of many of which leaves little to be desired in that direction. For all the purposes mentioned, the admirable illustrations found in the Royal Series of Readers, including the Primary Wall Cards, in Calkin's Geographies, Swinton's Outlines of History, and others of our prescribed text-books, are eminently well adapted.

In the second place, schools should be provided with sets of wall-charts and diagrams, such as may readily be had for illustrating lessons of plant-life, classification of animals, natural phenomena, the mechanical powers, etc.

Thirdly, the walls of the school-room may be adorned with a few historical pictures, views of famous places or edifices, or bits of scenery. These need not be expensive, since some of the illustrated weekly papers and their colored supplements (particularly the Illustrated London News and the London Graphic), and such publications as "The Aldine" and Appleton's "Picturesque Europe" and "Picturesque America" will afford abundance of excellent material. One or two good lithographs or chromos may

also be had at small expense. The framing may be very cheaply done, or the pictures may be simply mounted on stout pasteboard, with or without glass, and suspended by eyelets or otherwise.

In the fourth place, such pictures as I have already mentioned may be cut out of illustrated papers or obtained in various ways, from time to time, by a Teacher who is willing to go to a little trouble; and can be kept in a portfolio ready to be brought out when needed, and pinned up on the wall or handed round among the scholars.

In the next place, chalk and blackboard are always at hand, and may be used with excellent effect by the skilful Teacher or by some competent pupil. Good sketches in white or colored chalks may be made to suit every purpose, and they have one advantage over every other mode of illustrating except perhaps the next to be mentioned, in the fact that the drawing may be executed in the presence of the pupils. This will have all the zest of an actual creation going on before their eyes.

The last mode of representation to be named is that of projecting pictures upon a screen by means of a magic-lantern, sciopticon or stereopticon, as the instrument is variously styled. This mode surpasses all others in the range of its application, but is limited in its use by the cost of the apparatus. For Colleges, High Schools, and schools in large towns, however, the expense is by no means so great as to prevent the introduction of this most valuable source of instruction and entertainment.

I must now close this paper, without a peroration. Our subject of inquiry has been the ways and means by which the pictorial art may contribute to the requirements of school-work. What has been said may be summed up in the words of Ruskin, —"It gives Form to knowledge, and Grace to utility."

METHODS OF PRESERVING AND STIMULATING THE DESIRE FOR KNOWLEDGE.

BY JAMES HUGHES, INSPECTOR OF PUBLIC SCHOOLS, TORONTO.

Some one calls a child an "Interrogative machine." Truly the appetite for knowledge with which nature endows him is a keen one, and difficult to satisfy. Some writers maintain that it is the duty of the school to set the child going mentally, that he may be self educative when he leaves school. If pupils left school in as self-educative a condition as they enter it, there would be less ground for complaint than at present. The boy begins to "go" when very young, and for a few years he continues to develop at a rapid rate. Very few children are dull when very young. Most children make remarkable progress until they go to school. Then, too often, comes a period of stagnation from which many never emerge. Improper methods are too often the cause of the discouraging change. The following are points deserving consideration by teachers of primary classes.

1. The transition from the home to the school should be less sudden.

The child, on entering an ordinary school, passes from comparative freedom to confinement and restraint; from bounding activity to wearisome quiet; from actual things to uninteresting abstractions; from living flowers, and birds, and pets, to mere black marks called letters, in which for themselves he can have no active interest; from play to work; from instinctive to compulsory attention; from fresh air and sunshine to bad ventilation and imperfect and often injurious lighting; from the mossy bank to the hard and ill-formed seat.

Where the Kindergarten can be introduced it serves to make the steps gradual in the change from the home to the school. The school should learn many lessons yet from the home and the Kindergarten. Teachers must study the child more before he enters school, and they should continue in school, more closely, the methods of self-education practised by him while he was at liberty to follow nature's guidance.

2. Knowledge should be used as it is acquired.

Children delight in coming in contact with things which they can use. They care for what a thing does. The baby learning to talk, names the domestic animals according to the sounds they make. He calls the dog "bow-wow," and the cat "meow." This is true whether the name of the animal is more or less difficult to say than the sound made. While they have been making such rapid strides in learning and mental development at home, they were doing so by handling the things around them and by using their knowledge as quickly as they gained it. What a change comes when they go to school! Many even of the thoughtful class of teachers deliberately reverse this plan. They reason somewhat in this manner: "These children cannot do much actual work yet, and so we will save time by making them do the *drudgery* of school work now." They are therefore set to learn all the letters before they begin to read, all the tables before they put them to any practical use, &c. It is probable that the letters and the multiplication table have done more to stupify boys and girls than any other causes. Girls and boys can work, and by working they not only learn how to work better, but become familiar with the elements of work they may be using. Even if the worst of all methods of teaching the names of words, the *alphabetic*, be used, no letters should be taught at first but those used on the first page or tablet of *reading* in the primer. The child should *use* the multiplication table, for instance, as he *learns* it, and he will thus pleasantly learn it as he uses it. Using and learning go hand in hand. Practical application is the highest and most effective style of review. A pupil will learn the "Two" line as far as "twice 4" in four minutes, but it will probably forget it in an hour, unless it is allowed to apply the knowledge it has gained. Why not teach it the process of multiplying at once in five minutes more, and then set it at work? "Oh, the child should never multiply until it knows its multiplication table!" says some driller. Does the study of the multiplication table qualify a child for the comprehension of the multiplying process? Certainly not. Then, again, the child who has been taught as far as "twice four" *does* know the multiplication table, so far as he is required to put it in practice. His teacher can assign several examples with no other multiplier but 2, and no figures in the multiplicand but 1, 2, 3 and 4. It will do him great good to work the same examples over a second or third time. Next day advancement should be made in the table and much practice given on both lessons, and so on to the end. This method will not prove a source of horror to pupils, but will delight them because they use the information as they get it.

If an apprentice, on entering a machine shop, were compelled by the foreman to spend months in learning the names of the various machines, and their different parts, their relation to each other, their uses, &c., would such a course fit him to take charge of even one of the machines? The probability is that long before the expiration of the time specified, his work of learning, at first fascinating to him, would become loathsome, and from loss of interest he would be to a large degree incapacitated for the highest degree of success in his work. He should, and, in charge of a practical man in any department of work, he does begin with the simplest of all the tools or machines, and he learns how to use it by using it. Others are entrusted to his charge when he is ready for them. Teachers should also be reasonable in familiarizing their pupils with the tools they have to use. The letters, the tables, rules in

grammar and other subjects, are merely the tools with which the child should be taught to educate himself, and they should be given to him only as he is able to use them.

3. The work of school should afford pleasure. If the desire for knowledge is to be kept alive and vigorous, if it is to survive through the early years of school life, school work must be made attractive. Herbert Spencer says that of all educational changes taking place, "the most significant is the growing desire to make the acquirement of knowledge pleasurable rather than painful—a desire based on the more or less distinct perception that at *each age the intellectual action which a child likes is a healthful one for it;* and conversely. There is a spreading opinion that the rise of an appetite for any kind of knowledge implies that the unfolding mind has become fit to assimilate it, and needs it for the purpose of growth; and that, on the other hand, the disgust felt towards any kind of knowledge is a sign either that it is prematurely presented, or that it is presented in an indigestible form. Hence the efforts to make early education amusing, and all education interesting. * * * As a final test by which to judge any plan of culture, should come the question—Does it create any pleasurable excitement in the pupils?" Discard any system of primary instruction, however time-honored or in accordance with theory it may be, unless it makes lessons attractive. With the older children the step from *instinctive* to *controlled* attention must be gradually taken.

It is very desirable that teachers should avoid any course of action which will tend to make learning distasteful. If men are to be self-educative when they leave school, they should have a love for knowledge; certainly they must not have an aversion to it. Lessons should never be assigned as a punishment. Pupils may be compelled to do, after school or at home, work which they have neglected to do at the right time. This is not a punishment for the neglect. however, but the performance of a duty which ought to have been done before.

4. School Exercises should be varied as much as possible. Of course the programme of studies should be fixed, and the time table adhered to regularly. The plan of presenting a subject should be changed, however. Some new element should be introduced each day. In teaching Geography, for instance, the map may be used one day, blackboard and slates the next, and the sand-box the next; to-day the teacher may point to the places he wishes to have remembered, and the pupils find their names; to-morrow he may give their names, and they find their positions on the map. The plan should be varied during a single recitation to a certain extent. So long as variety does not dissipate the attention, there cannot be too much of it. Freshness stimulates mental activity, routine deadens it.

5. The Child's Curiosity should be kept alive. Some pupils are always on the tip-toe of expectation. The teacher who can secure such a condition in his class is certain to have attentive scholars. Natural aptitude in the teacher has something to do in stimulating the curiosity of pupils. The power to sustain it, however, must be acquired. Pupils will not long seek to be fed with chaff. *The teacher must be prepared to gratify the appetite which he seeks to develop.* He *must* be familiar with the subjects he has to teach; he *should* keep thoroughly prepared with all that relates to them in connection with current events. Hart aptly says: "To real, successful teaching, there must be two things, namely, the ability to hold the minds of the children, and the ability to pour into the minds thus presented sound and seasonable instruction. Lacking the latter ability, your pupil goes away with his vessel unfilled; lacking the former, you only pour water on the ground."

6. The lessons given and the subjects taught should be adapted to the advancement of the pupils. If lessons are too difficult, a child will naturally turn from them, first in disappointment, afterwards with dislike. The subjects should be presented in a manner suited to the ages of the pupils taught. Some of the most interesting studies are rendered permanently obnoxious by improper methods of teaching them to children at first. In teaching Grammar, for instance, dry, difficult, and uninteresting rules, with puzzling *exceptions to the general rule*, are memorized and recited, and the teacher, in addition to this outrage, actually deceives the unfortunate and long-suffering pupils by allowing them to believe that such wearisome drudgery is learning grammar. They of course in most cases associate the unpleasant feelings they receive in school with study and learning in the abstract, and therefore get a distaste for knowledge itself. Let the methods and the subjects be appropriate for the ages of the pupils, and their love of learning will continue.

7. The steps in learning should not be too great. If a desire for knowledge is to be maintained, the pupil must be able to see clearly how one portion of a subject is connected with another. The step to be taken should be based on those already established, and the teacher should remember that what appears but a molehill to him may be a mountain to his pupils. He is the best teacher who can most clearly remember his own early difficulties in learning.

8. Lessons must not be too long. This is true both as regards lessons at school and those assigned for home preparation. Long-continued lessons in school weary the mind; long lessons learned at home tire both mind and body. When learning becomes a "task" it necessarily ceases to be attractive in itself. It should not be surprising that, under such circumstances, children should lose their natural eagerness for knowledge.

If the suggestions given be carried out in the right spirit, boys and girls will continue to be "interrogative machines" throughout their whole lives.

THE SCHOOL SUPERINTENDENT AND HIS TEACHERS.

BY J. L. PICKARD, PREST. IOWA COLLEGE, IOWA.

Among the varied duties of the School Superintendent, those growing out of his relations to his teachers claim attention.

1. *He should be a leader.* To this end his fitness to lead must be recognized. His better acquaintance with the work required of teachers must be everywhere apparent. This acquaintance should be the child of experience; hence it is better, though not, in exceptional cases, essential, that the superintendent be chosen from the ranks of professional teachers. Theorizing the most attractive, the most plausible, even, will not satisfy the demand. Nor will practice in a narrow field prepare him for his wider duties. A wide and varied experience gives vigor to consciousness of power,—a prime element in successful leadership. But a leader, though familiar with details, cannot be burdened with them; he must generalize, grasp principles which underlie the detailed work assigned to his subordinates. It is his to plan the campaign, to assign to each division of his forces the work to be done, indicating the results to be accomplished, and leaving the minutiæ to the discretion and loyalty of his teachers.

2. *Confidence in the discretion of his teachers of necessity follows, from his lack of time to attend to details.* If a superintendent feels it incumbent upon himself to mark out the steps for individual teachers, two things equally disastrous are consequent—the frittering away of his own time, and the purely mechanical work of each part of a vast machine. If he finds in his corps of teachers a manifest lack of discretion, the best remedy consists not in

himself doing the work through a faulty agent, but in changing the agent. If he cannot rely, he should relieve. At all events, he should so far presume upon the intelligence of his teachers as to free them from the feeling that they are set to do another's work in a way marked out by another's will. There are matters of form, mechanical in their very nature, in the attention to which the teacher may safely follow explicit directions; but one way is open, and no opportunity for choice can be given. These matters are, however, the least important of all. In the great work of the teacher,—the building up of the character of the pupil, and the fashioning of his style of thought,—there is ample opportunity for the exercise of diverse gifts; occasion for the use of individual power; ample field for the cultivation of the freedom of the teacher. No superintendent can afford to sacrifice the freedom of the individual teacher. He may counsel, but not direct; he must lead, but not control, except in that indirect way which is the outgrowth of a marked superiority. He who has the broadest views of the work of supervision will most surely exercise trust in the discretion of his teachers. He recognizes the possibility of different routes to the same end. He knows that variety in means best suits varying ability, and that freedom in the line of earnest service secures the best results. Hampering teachers with minute details as to the method of work, frets and hinders rather than helps. Manifest suspicion of indiscretion increases the probability of its existence. Trust encourages effort, and helps to establish proof of its worthy bestowal. It may be misplaced, but the remedy is simple a teacher who fails in discretion, after full opportunity for its free exercise, should not be left to trouble the superintendent, and to stand in the way of one capable of better service. But too hasty judgment is to be deplored; hence,—

3. *Patience is requisite.* The best service possible to a teacher is not always apparent upon first trial, nor in the first place obtained. It is unwise to condemn after the first failure; it may result from a mistake which in another and similar case may be, will be, corrected. Circumstances may be unfavorable, and an entire change will show that the failure was not in the teacher, but in her surroundings. There are those whose natural strength will carry them through all trials; others need such assistance for a time as favorable surroundings may furnish. With some there is a consciousness of power; with others, the power, but not the consciousness, exists. To the latter the encouragement of success, found by the application of the power to some slight resistence, develops the consciousness, and secures good results. With some, the power is yet in its germ, and needs the sunshine of a smile, the rain of kind advice, for its full development. Some of the best teachers of my acquaintance have been spared through the patience of their superiors. But patience "may have her perfect work," and forbearance may "cease to be a virtue;" still conscious inability will honor the superintendent's decision. His patience will not be simply enduring, but active in correcting faults with which he bears, and mercy will temper.

4. *Justice in dealing with the faults of his teachers as well as in his estimate of their merits.* Overpraise, misapplied praise, are as unjust as unmerited censure. In any body of teachers no one can monopolize all the excellences. "Faithful are the *wounds* of a friend;" they are the wounds made by a skilful surgeon, not to hurt, but to heal. To withhold friendly criticism and then to visit judgment for faults which might have been corrected, is the rankest injustice. Such a course assumes that the teacher is conscious of her faults and willingly perpetuates them. If such wilfulness leaves no ground for assuming, but actually proves its existence after proper admonition, there is but one course for justice to pursue, and the guilty one will assent. If to the superintendent's human nature some favorites be essential, let them be selected from those who have "organized victory" for themselves, who have come up "out of great tribulation." Such will have the good sense not to be damaged by favoritism. Better still, if he can so far overcome human frailty as to be the *fast* friend to merit wherever found, the *faithful* friend to faults in whomsoever they exist. Justice withholds not merited censure, confers not unmerited praise.

Frequent opportunities will be given for acting the part of a wise and just mediator between teacher and parent. In no other part of the superintendent's work will he need greater discretion. To make both parties, in a conflict of opinion, feel that he is a true friend whose decisions will always be just, demands experimental knowledge of the position held by each. One who has been a teacher, and who is a father, is best prepared for such a demand. A teacher's vocation inclines to self-assertion. A parent's love blinds him to the faults in his own children, even if it magnifies not the faults in those of others. An opinionated teacher, and a blinded parent, being given the conditions, are highly favorable to a first-class controversy. An *ex parte* hearing of such a case but widens the breach, and a hasty decision made upon the application of either party lays the superintendent liable to the charge of injustice. Let both sides be heard, and the point at issue be divested of all misunderstandings, and the case will settle itself to the satisfaction of both. My experience has convinced me that most controversies, cleared of all misunderstandings, are reduced thereby to a compass so small as to shame those who persist in attempting to stand upon it. The wisdom of the superintendent will be seen in curbing the teacher's vanity, and in curbing the parent's blindness.

Enough has been said indirectly, in previous articles, upon the need of a watchful eye over the interests of pupils in the hands of teachers who may be just with the best of motives. Self-interest sometimes may underlie great devotion to the interests of pupils. The system of grading teachers upon percentages obtained by their pupils is liable to gross abuse. It may be of use for purposes of private counsel, but unjust when made a basis of public award. There are many elements beyond the mathematician's determination which utterly destroy the value of his results. Another source of injustice is found in the publication of a list of promotions of pupils within some specified time, unless the time cover a period sufficient to permit the elimination of all temporary, incidental influences which may favor or retard the moving forward of pupils, with due regard to the mutual obligations of teacher, pupil, and parent, the superintendent will cherish.

5. *A spirit of helpfulness.* The larger experience can always be helpful in ways that will not abridge the freedom of the less. The work of instruction is shared by superintendent and teachers. He, the controlling spirit,—they, the active participants; he, the general,—they, the rank and file. Any corps of teachers is the stronger for their reliance upon their leader. His spirit of helpfulness will beget in them a spirit of comity, which shall bind them to their work as it attaches them more firmly each to the other. If a superintendent will *lead*, *show confidence* in, *have patience* with, *be just* to, and wisely *help* his teachers, he will find through their hearty co-operation assured success. Their obedience will be more cheerful as they recognize the ability of their leader. Their discretion will grow with opportunities for its exercise. Their shortcomings will be lessened through the notice taken of their good qualities, and the friendly overlooking of their faults. Reproof, even, will be the more welcome if they find their deserts are recognized. Their weakness will be made strength by timely assistance. The superintendent does his best work through devoted co-workers: devoted not to him, but to the work he is set to supervise.—*New England Journal of Education.*

WHERE ALL THE "JOHNS" COME FROM.

"And he asked for a writing-table, and wrote, saying, His name is John." That was shortly before the birth of our Saviour, and it would seem as though the tablet of old Zacharias had been kept in pretty constant use ever since. The name would have been appropriate even without the angelic injunction, for what more natural than that Zacharias and Elizabeth, who had no child—"and they both were now stricken in years"—should call their son by that Hebrew word which to them signified "the gracious gift of God?"

The name Jesus could not, without irreverence, be applied to their own children by his followers, but the names of the three persons who stood in the closest relations with Him—St. John Baptist, St. John the Divine, and Mary the mother of Jesus—became, and have continued to be to this day, the most common of any throughout Christendom. The name of John has had all the means of perpetuity that other names have had in the way of repetition in families from one generation to another, and it has been extended by the fact that there are many calendared saints who have borne it, after whom it has been customary to name children born on their respective days, amd no doubt it was greatly extended by naming the babies of England after that King who gave *Magna Charta* to his barons at Runnymede, and, besides, John is a name to make good headway on its own merits; but, after all, the wonderful popularity of the name in all ages among Christian people must be accounted for by the fact that it was borne by those two, who, in considering the merely human nature of our Lord, stood to Him almost in the relation of elder and younger brother.

The name entered into all European languages, becoming Ioannes in Greek, Iohannes in Latin; Giovanni, Gian and Gianni in Italian; Johann, Johannes, and Hans in German; Jehan in early and Jean in later French, Jan in Dutch and Ivan in Russian, and Evan and Owen in Welsh. In England it is found in the form of Jon, Jone, John, and Joon in the thirteenth and fourteenth centuries, and sometimes it got twisted into Jhon. The common English feminine forms are Johanna, Hannah, Joanna, Joan, Jane, Jenny and Janet.

Among the family names given in the Chicago Directory which are derived from these various forms of the name of John are the following: Bevan (ap-Evan), Bevans, Bowen (ap-Owen), Evan, Evans, Evanson, Hauck, Hancock, Hankin, Hankinson, Hanks, Hannah, Hannaway, Hannay, Hanson, Hansbrouge, Hanscom, Hanstead, Hanstein, Hanoza and Hanszezyk, Jan, Janes, Jannay, Janson, Jeannot, Jenison, Jenkins, Jenkinson, Jenks, Jenner, Jenney, Jennings, Jack, Jackaway, Jackman, Jackson, Jacky, Jock, Johanson, Johnes, Jones, Johnjohan, Johnson, and Johnston. It has been said that plain John is not used as a surname in England, but our Directories show no less than twenty such, and of these two rejoice in the name John John.

The transmutation of John into Jack is sometimes said to have come through the French Jacques, but this is erroneous. Jacques does not represent the name of John at all, but is the Jacob of the Old Testament, the James of the New, and the Giacomo, Iago, and Jakob of European languages. We are all familiar with such diminutives as pipkin, manikin, and lambkin. The same diminutive termination is frequently added to names, and especially to nicknames. Thus, Simon is first shortened to Sim, and little Sim becomes Simkin, and hence the surname of Simkins. Thomas becomes Tom, and then Tomkin, which now appears in the shape of Tomkins. Walter becomes Wat, and Watkin and Watkins, and so John takes the form of Jonkin, Jankin, Jenkin, and Jenkins. But Jonkin and Jankin made pretty hard words for little mouths to speak, and so in the nursery they became Jocky and Jacky, just as Mary became Mally and Molly and Polly, and Sarah became Sally, and Martha became Matty and Patty, and Margaret became Maggy and Meggy and Peggy, in the same prolific region for the invention of new words. Taking up the children's Jocky and Jacky, the older people in colloquial use soon shortened them to the Jock of Scotland and Northern England, and the Jack of Middle and Southern England and the United States.

John and Jack have served us not only as names for our babies, but they enter into the composition of names of unnumbered things of familiar use. Who is not happier and better for the immortal johnny-cakes of our mothers? What little boy could ever grow to be a big man without wearing his first jacket (equivalent to little jack) with two pockets in it? Meat-jacks, boot-jacks, and smoke-jacks are old friends, and so is jack-at-all-trades, and jack-an-apes, and the jack that is so much of a knave that he will sometimes fall on the king of trumps. A jack-knife is more precious than a Toledo blade, and about the only disreputable members of the family of John are the jockey who cheats in a horse trade, and then the yellow-jack that desolates the land where he walks.—*Chicago Inter-Ocean.*

HOW TO TEACH.

Given a person well versed in general knowledge, and specially acquainted with the details of some particular branches, the problem which presents itself for solution here is indicated by the question, "In what way shall such a person impart to others the knowledge which he has won for himself?" It is clear that the answer resolves itself into two parts: first, as to the manner in which the teacher should arrange and prepare the various parts of each subject of instruction, so that the easy should come before the difficult, and every step be a preparation for that which is to follow it; and, secondly, that such plans should be adopted as will best tend to excite the attention of the pupil, and dispose him to exert all his mental powers in order to comprehend, to appropriate, and to assimilate the instruction which is being given to him, In selecting these plans, and still more in using them, the teacher should bear continually in mind that the communication of knowledge is to be employed as the means of improving and training the mental powers, and, where religious instruction is concerned, the moral emotions. . . . Young teachers, both in Sunday and day schools, ought to spare no efforts to become proficient in the art of questioning. We would recommend them to place written interrogatory exercises as a subject on their programme of evening studies, and to spend at least one hour a week in careful application to it. A good plan is to take a portion of scripture or secular reading lesson, and write down all the questions and explanations on paper which the teacher would deem it necessary to give were the class actually before him. These questions should be divided into the different kinds mentioned above, and the rules previously given should be carefully borne in mind. But this written exercise must on no account be slavishly followed when the lesson is actually given, nor should it be near at hand even for reference. As the questions given during the progress of the lesson must depend on the answers of the pupils, the teacher must not allow himself to be cramped and fettered in any way by his previously written exercise. At another time he may take some subject of instruction, as "the manufacturing towns of England;" arrange his ideas on it in the shape of written notes; and then write out the questions which would most likely be required to bring out the lesson in a natural and orderly manner, were the pupils really in his presence. In this way the young teacher would find himself growing continually in readiness and teaching power, and his pupils would reap the lasting benefit of his exertions.—*From Cassell's Popular Educator.*

Examination Questions.

COUNTY OF PEEL PROMOTION EXAMINATIONS, JANUARY, 1880.

D. J. M'KINNON, INSPECTOR.

Third Class—Promotion to Fourth.

READING.

(50) Third Book, page 18—"A gentleman———saw my business done myself."

SPELLING AND DEFINITION.

[*On paper from Dictation—Five marks off for each error in the spelling.*]

(100) They planted a rude cross of the knotty tamarack wood. Towards Penn and his followers they buried the war hatchet. He took off his big bearskin grenadier's cap. We were bounteously rewarded for our anxiety.

The goat violently opposed the entrance of the stranger. Professor Youatt, of the Royal Veterinary College. A royal lady, in one of the rush strewn halls of her rude English palace. The language of this nation seems unintelligible to a foreigner. Daubing it over with a greasy matter. You shall be strongly recommended to the Government.

(50) II. Express in other words what you understand by "planted a rude cross," "buried the war hatchet," "bounteously rewarded," "violently opposed the entrance of the stranger," "Veterinary College," "The language seems unintelligible to a foreigner," and "daubing it over," in the above.

WRITING.

(40) I. Third Book, page 309—"At Edmonton———at Ware."
(10) II. Three lines of the ten digits.

ARITHMETIC.

(10) I. Find the difference between four hundred and seven times eight thousand and forty, and 3582267648÷48 in factors.
(10) II. What number must be added to 765453 to make it exactly divisible by 765?
(5) III. Find the sum of LXXV times MCCXC and 25 times 705.
(15) IV. If the apple trees in an orchard are planted 30 feet apart, commencing at the end of each of 20 rows 690 feet long; and if a plum tree is planted in the row between each two apple trees, how many apple and how many plum trees in the orchard?
(15) V. If a horse eats 30 lbs. of hay in a day, how many days will 9 tons last 12 horses?
(15) VI. If a barrel of apples contains 2 bush. 3 pecks, how many barrels can be filled from 55 trees, each bearing 4 bushels?
(15) VII. If a farmer has a ten-acre field, how much more will he gain by growing barley, yielding 40 bushels to the acre, at 65 cents a bushel, than by growing wheat yielding 25 bushels to the acre, at $1.10 a bushel, provided the cultivation of the wheat costs $3 per acre more than that of the barley?
(15) VIII. What is the value of a pile of wood 36 feet long, 4 feet wide and 6 feet high, at $3.50 per cord?

GEOGRAPHY.

[*In answering questions II and III begin a new line with the name of each town, &c., to be located.*]

(10) I. [*a*] Draw a Map of the County of Peel,
(5) [*b*] Showing the Townships,
(6) [*c*] Tracing the Railroads and the River Credit,
(6) [*d*] And locating Brampton, Streetsville, Bolton, Alton, Cooksville and Charleston.
(20) II. In what Counties and on what railroads are the following towns respecively situated:—Brockville, Orangeville, Clifton, Guelph, Simcoe, Elora, Ingersoll, Port Hope, Ottawa and Barrie?
(28) III. What and where are the following:—Manitoulin, Chaleur, Miramichi, Cuba, Winnipeg, Panama, Chesapeake, Frazer, James, Assiniboine, Charlottetown, Maitland, Quinte, Keewatin?

COMPOSITION.

(50) "The Power of Kindness"—Third Book, page 177.

[*Teachers will read the lesson to the candidates, who will thereafter write its substance as much as possible in their own language.*]

CANADIAN HISTORY.

[The following paper, copied *verbatim* from the last Christmas Examination Papers of a Western County Model School, is inserted for the use of such Teachers as may choose to avail themselves of it. It is not expected that any pupil who succeeds in other subjects will be rejected on account of failure in this.]

(2) I. When and by whom was America discovered?
(2) II. To what persons did he apply for assistance, and with what result?
(2) III. How many voyages did he make, and when did he reach the mainland?
(2) IV. Explain how this continent got its name.
(2) V. What parts of America were colonized by Britain?
(2) VI. By whom was Canada first colonized, and what does the name "Canada" mean?
(2) VII. Give a sketch of three of the first explorers of Canada, and tell the names and positions of the first settlements.
(2) VIII. What privileges had the "One Hundred Associates," and what were they to give in return for their privileges?
(2) IX. Give names and dates connected with the founding and taking (at different times) of Quebec.
(2) X. Give a brief account of Frontenac. Of what city did he lay the foundation?
(2) XI. Who were the U. E. Loyalists? How were they treated by the British Government?
(2) XII. What took place in 1791, 1759, 1867?
(2) XIII. Give a brief account of the rebellion of 1837?
(2) XIV. By whom are our laws made and administered?
(2) XV. What is meant by the "National Policy?"

GRAMMAR.

(10) I. Define each of the following: Letter, Syllable, Word, Sentence, Proper Noun, Adverb, and give four rules for the use of Capital letters.
(12) II. Form two simple and two compound sentences each containing the word *horse*.
(20) III. Classify the words in the following:

"The flames rolled on—he would not go
Without his father's word;
That father, faint in death below,
His voice no longer heard."

(20) IV. Give the masculine of countess, hind, roe, lady, niece; the plural of penny, cuff, lady, miser, deer; and compare old, near, ill, funny and dry.
(15) V. Divide the following sentences into Noun part and Verb part:—[*a*] Have you any money? [*b*] The sea, having spent its fury, became calm. [*c*] There was a lack of woman's nursing. [*d*] The boy, overcome with fatigue, soon fell asleep. [*e*] Sweet is the sound of the echoing horn.
(25) VI. Parse all the nouns and adjectives in the five sentences of the fifth question.

Notes and News.

ONTARIO.

There are 1,256 students at the Toronto night schools.

H. L. Rice, B. A., has been appointed Classical Master in Galt Collegiate Institute.

Mr. Bellhouse has been elected Chairman of the Brantford School Board.

Lindsay High School has opened with a largely increased attendance.

Mr. James Wilson is the new Chairman of Kingston School Board.

The many friends of Professor Young will be glad to learn that he is again able to resume his duties.

An Association for the study of the Natural Sciences has been formed in connection with University College, Toronto. Graduates and under-graduates who are taking the honor course in Natural Science are eligible for membership.

Mr. James Bain has been elected Chairman of the Toronto Public School Board.

Mr. L. C. Peake, Secretary of the Toronto Central Sunday School Normal Class received the second prize at the examination at Chautauqua, in 1879. He was the only Canadian of nearly three hundred students.

J. W. Spencer, B. Sc., Ph. D., Science Master of the Hamilton Collegiate Institute, has received the appointment to the Chair of Chemistry and Natural History in the University of King's College, Windsor, Nova Scotia; his successor in Hamilton is R. B. Hare, B. A., Ph. D., a graduate of the "Vratislavienses," Breslau, Silesia. Dr. Hare, after graduating in Canada, spent four years in the University at Breslau, and devoted most of his time while there to the study of Science. The Rev. Principal Hare, of the Ontario Ladies' College, Whitby, is his brother.

Mr. McBride, Head Master of Port Perry High School, was recently presented with a silver tea service by his pupils.

At the Northern fair in the County of Middlesex, a large number of prizes were given for proficiency in the branches of study taught in the Public Schools. The highest prize was a gold watch.

The High School entrance papers were used in North Hastings as a test for promotion from the 4th to the 5th book classes.

On the evening of the 12th of Dec., the members of the Literary Association of the Orillia High School gave a very interesting entertainment, which passed off most successfully. The programme consisted of tableaux, songs and recitations, and ended with a laughable comedietta. The young people have now, by their own exertions, raised $75 towards their library fund.

Mr. W. J. Briggs, B. A., who has held the position of Principal of the Smith's Falls High School for the last ten years, having resigned, his pupils presented him with an address, accompanied with a gold chain. The inhabitants of the village presented him with a well-filled purse.

Wm. McClure, B. A., McGill College, Montreal, gold medallist in Mathematics, prizeman in Chemistry and French, and first of his class, 1879, has been appointed Mathematical and Science Master of the Oshawa High School. Mr. McClure's college course was a remarkably brilliant one, and it is confidently expected that he will ably help to maintain the present excellent standing of the school of which he is now a teacher.

At the last meeting of the West Huron Teachers' Association the following rules for conducting uniform promotion examinations were passed :—1. That a Limit Table, showing the course of study for the various classes, be prepared, and that two copies be supplied to each school, one to be the property of the master and the other the property of the trustees. 2. That the examination questions for promotion in the various classes be prepared within the Limit Table, and that the value be assigned to each question by the parties preparing them. 3. That the examinations be conducted simultaneously and that each teacher preside at the examination of his own pupils, assisted by at least one of the trustees or some person to be named by them. 4. That each teacher forward to the Inspector, at least one month before the examination, the number of papers required by the various classes. 5. That the printed papers be sent to each teacher, and that the seals be broken by him in the presence of the pupils on the day of examination. 6. That each teacher examine the papers of his own pupils, but that two or more teachers in a township may combine to examine their papers together. 7. That each teacher forward the result of the examinations to the Inspector within three weeks from the examinations; and that promotion certificates be given to those entitled to them, signed by the Inspector and the master of the school. 8. That the examinations be held semi annually, about the end of May and the beginning of December.

Chatham High School.—This institution is now (1880) in a more flourishing condition than it has been during any previous year, the average attendance having increased very greatly even over that of last year, which in its turn exhibited a wonderful improvement upon preceding years. Among other additions may be mentioned the Museum and Library, Mr. Wilkins, Mathematical Master, having placed his valuable collection of two thousand geological and mineralogical and eight hundred botanical specimens at the disposal of the trustees during his connection with the School; and Mr. Paterson, the Principal, and Mr. Hoople, Assistant Master, having contributed a large quota of books for the latter. Through the indefatigable exertions of the Principal and of Capt. Beaumont, Calisthenic Instructor, a drill shed and gymnasium have been built. To the former will be added, as soon as possible, an armory with an orderly room. The gymnasium will contain all the best and most modern appliances, and there will be added, as soon as possible, a bowling alley. Vocal music has, during the past year, received some attention, the students having on several occasions rendered operatic choruses, sometimes in costume, to the satisfaction of all present.

Pickering College, an institution endowed and maintained by the Society of Friends, but open to young people of both sexes, seems to be in a very prosperous condition. The object of the School is to secure to its students as thorough an education as can be obtained outside of a university or of a professional school, and at the same time to surround them with all the moral influences and guarded care of a well-conducted home.

The qualification for entrance into the College is the same as that required for High Schools and Collegiate Institutes, but there is a preparatory class for those not having passed the entrance examination.

The programme of studies for entered students is arranged with two main objects in view. First, to prepare students for passing the examinations annually held by the Department of Education, called the Examination for Third Class Certificates, and the Intermediate Examination, or Examination for Second Class Certificates; and secondly, to prepare students for passing the Examination for First Class Certificates, and also University Examinations of Junior Matriculation, Senior Matriculation, and the Examination for first year.

The School reopened for the Winter Term on January 8th, with an attendance just double that of its previous maximum attendance. Full classes are reading for the Entrance, Third Class, Second Class and First Class Examination of the Education Department, and also for the Junior Matriculation Examination of the University, and the Matriculation Examination of the Law Society and of the Medical Council. There is also a Commercial Form, in which the work usually taken up in Commercial Colleges, including Bookkeeping Theoretical and Practical, Commercial Arithmetic, and Business Forms, is taken up. This form is one of the largest in the College. The College has lately made an addition to its staff of teachers, Mr. B. F. Wood, First Class Grade A. Provincial Certificate, and Graduate of Bryant & Stratton's Business College of New York.

NEW BRUNSWICK.

From information received from various parts of the Province, we are pleased to learn that there is at the present time an unwonted activity in educational matters, both in the towns and in the country districts. Whatever other causes may be thought to account in part for this activity, there can be no doubt it is very largely due to the action taken by the Board of Education, in October last, in inaugurating an improved system of School Inspection, and prescribing Courses of Instruction for the Schools. The classification of schools as being of the 1st, 2nd, or 3rd Rank, or as having failed to classify, and the apportionment of the Provincial grants to Teachers in part according to the Rank of their Schools, cannot but operate as a stimulus to the Teachers. Every Teacher will be more anxious than ever to have his or her school in good condition against the Inspector's visit. And it will not be, as some suppose, merely a temporary putting forth of energy, to lapse into indifference after the inspection is over; for the classification of the School depends upon the proportion of the pupils who are able to pass the required tests, and this depends upon the quality of the Teacher's work, week in and week out. That the adoption of the Course of Instruction will tend to improve the character of the work done in the Schools must be no less evident.

The Annual School Meetings, in all Districts in which such meetings are required, were held according to law, on the 8th of January, when Trustees were elected and moneys voted for carrying on the Schools.

The *Educational Circular*, No. 10, issued in January, contains several amendments to Regulations of the Board of Education, of which the following are the chief portions of general interest:

The Summer Vacation, instead of being "at such time or times as the Board of Trustees shall determine," is henceforth to begin, throughout the Province, on the second Monday in July, except when it falls earlier than the tenth of the month, in which case the Vacation will begin on the third Monday in July.

The Teachers' Institutes, instead of being each for "an Inspectoral District," are to be "County Teachers' Institutes." This is a change in name only, as each Inspectoral District heretofore consisted of one County. The Inspector is to be *ex officio* a member of the Committee of Management of each County Institute within his Inspectoral District.

An important change is made with regard to the issuing of Local Licenses. Previous to the passage of this Amendment, the Inspectors were empowered, under certain restrictions, to issue a local license of the Third Class (valid only in the School District for which it was granted, and only for one year unless renewed by permission of the Board of Education) to persons ineligible for the regular examinations for license, or desirous of engaging in teaching before the half-yearly examination. Under the amended regulation, a Local or District License may be issued by the Inspector, only in case the Board of Trustees of the District are unable to obtain a suitable licensed Teacher, and in case the Inspector then deems it necessary in the interests of the School service; such license will be valid only for one term or two terms (according as the person receiving it has or has not previously taught on a Local License in the Province), and will be granted only on condition that the person receiving it agrees, under guarantee, to attend the Normal School at the close of the term or terms. The Inspectors may also issue and renew licenses of the Third Class to persons qualified to act as class-room assistants, empowering them to act in that capacity only, and only in the School for which such licenses are

issued. "A person eligible for examination for School License, desiring to engage in teaching before the time fixed for the examination, may receive from the Chief Superintendent a license of the Third Class for the current term, on condition that such person undergo examination at the time fixed for the same."

The Westmoreland County Teachers' Institute will hold its third Annual Meeting at Dorchester, on the 12th and 13th February.

The time fixed for the Annual Meeting of the (Provincial) Educational Institute is nearly a month earlier than last year—viz., on the 13th, 14th and 15th of July.

It may not be known to many teachers that there is a revised and a greatly improved edition of the prescribed Drawing Books and Cards (Walter Smith's). In this new series, the books of which are numbered consecutively throughout, the exercises are simple, more progressive in their arrangement, and more nicely executed than in the former series. While both the paper and the execution of the work are improved, and the books are of about the same size as before, the price is not increased. The Board of Education has caused the following note to be inserted in the Course of Instruction as published recently: "The revised edition of the Cards and Drawing Books are to be secured when new Cards or Books are needed in the school. Where Cards or Books of the previous edition are on hand they may be used during the ensuing year." There is also a new edition of the Royal Reader, No. 1, containing a supplement, to which reference may be made in a future number of the JOURNAL.

NOVA SCOTIA.

The *Royal Gazette* announces the new arrangements for the Inspection of Schools as follows:

District No. 1.—The City and County of Halifax—Hinkle Congdon.

District No. 2.—The Counties of Lunenburg and Queens—Thos. R. Pattillo, A. M.

District No. 3.—The Counties of Shelborne and Yarmouth—A. C. A. Doane.

District No. 4.—The Counties of Digby and Annapolis—Leander S. Morse, A. M.

District No. 5.—The Counties of Kings and Hants—Colin W. Roscoe.

District No. 6.—The Counties of Antigonish and Guysboro'—Roderick McDonald.

District No. 7.—The Counties of Cape Breton and Richmond—Alex. McKinnon.

District No. 8.—The Counties of Inverness and Victoria—John Y. Gunn.

District No. 9.—The County of Pictou, and that part of the County of Colchester not embraced in No. 10—David H. Smith, A.M.

District No. 10.—The County of Cumberland, and that part of the County of Colchester comprised by the District of Stirling and the townships of Economy and Londonderry—W. D. McKenzie.

As a rule, the Press of the Province, both secular and religious, refer to the above arrangements in commendatory terms. The *Chronicle* (Reform) hints that one appointment may have been dictated by political motives, while it candidly admits that the gentleman continued in office has proved himself a thorough good Inspector. The *Herald* (Liberal Conservative) states that "of the new Inspectors, the only one who has not previously filled that office is a Grade A teacher taken directly from the Schools, and that of the others, all with but one possible exception, were Public School Teachers before they were Inspectors." The *Presbyterian Witness*, *Wesleyan*, and *Christian Messenger* (Baptist) express general approval. The latter characterizes the movement as "a great advance."

It is stated on authority that the condition of accepting and retaining office is exclusive devotion to its duties.

The Senate of the University of Halifax met on the 6th of January, in the Legislative Council Chamber. In the absence of the Rev. Chancellor from indisposition, the chair was taken by the Vice-Chancellor, W. J. Stairs, Esq. The following members of the Senate were present, in addition to the Vice-Chancellor: Very Rev. Principal Ross, Rev. Principal Macknight, Rev. R. McDonald, Rev. J. Ambrose, Rev. E. M. Saunders, Hon. Judge Johnston, Hon. P. C. Hill, Hon. Senator Powell, Professor Higgins, President Inch, Dr. Honeyman, Dr. Lawson, the Superintendent of Education, Dr. Farrell, Dr. A. P. Reid, and Dr. R. S. Black. Much important business was transacted.

The following regulation regarding Text Books was adopted:

"Where several Text Books are in any subject suggested, candidates may read any one of them, or any group of them, as the case may be; but in all such cases the candidates be required to notify the Registrar at the time of transmitting their certificates of the Text Book or Text Books used by them, and the Registrar, in his notification to the examiners in their subjects, shall give a list of all the books used by the several candidates.

The following Committees were appointed: 1.—To appoint Examiners in Arts and Science: The Chancellor, Rev. President Dart, Professor Lawson, Dr. Allison, Superintendent of Education, Rev. R. McDonald, Rev. Principal Macknight. 2.—To appoint Examiners in Law: Hon. S. L. Shannon, Hon. Judge Johnston, Hon. L. G. Power, Hon. J. S. D. Thompson, Attorney General, the Chancellor. 3.—To appoint Examiners in Medicine: Dr. R. S. Black, Dr. A. P. Reid, Dr. Farrell, the Chancellor.

Rev. Principal Macknight, Rev. R. McDonald, President Inch, and the Registrar were appointed a Committee to report subjects of examination for 1880.

The Report on first B. A. Examination showed that the first prize had not been awarded. The second prize was won by Saml. C. Murray, of Mount Allison; the third by S. Dunn Scott, of Mount Allison; the fourth by J. McKercher, of Montreal.

The Report on the Second B. A. Examination showed that the only candidate had failed. Some discussion arose as to whether his protest against the decision of the Examiners should be read and considered. A resolution to do so prevailed, whereupon the Senate unanimously resolved to sustain the decision of the Examiners.

The Report on Second B. S. Examination was read, showing that the degree of Bachelor of Science, with a place on the First Division, had been obtained by A. H. McKay, Esq., Principal of the Pictou Academy and B. A. of Dalhousie College.

The Report on First LL. B. Examination was approved, as also that on Second LL. B. Examination, the Degree of LL. B. being conferred on Messrs. J. H. Sinclair, J. M. Oxley and W. E. McLellan.

The Report of the Committee on Presentation, recommending that a public presentation be held this year, was adopted, and Wednesday, September 11th, fixed as the day.

A motion of Hon. Senator Power to withdraw Chemistry from the list of required subjects, and place it as an option with History and one or more of the modern languages, was debated at length. The net result of the discussion was the appointment of a Committee, composed of the Chancellor, the Superintendent of Education, Senator Power, President Dart, Professor Lawson, and Dr. Honeyman, to consider the subject and report at the next meeting of Senate, as to the propriety of modifying the B. A. Course in the above regard.

The following were appointed a standing Committee on Text Books:—The Chancellor, Dr. Allison, Rev. Principal Macknight, Prof. Lawson, Hon. L. G. Power, Dr. A. P. Reid, Prof. Higgins, Rev. Principal Dart, President Inch.

The most interesting and spirited discussion of the Session took place on President Inch's motion to open up the privileges of the University to women. The proposal was strongly supported by Professor Higgins and the Rev. Mr. Ambrose. Senator Power spoke in opposition. Professor Lawson inquired if the Statutes of the University do really discriminate against women. Finally the Committee named below was appointed to consider the subject, and report at the June meeting of the Senate:—President Inch, Rev. Principal Macknight, Dr. Lawson, Dr. Farrell, Hon. L. G. Power.

It is understood that the first meeting of the Educational Association of Nova Scotia (see Official Department) will be held at the Normal School, Truro, on the 14th and 15th of July.

There are 119 enrolled pupils at the Provincial Normal School. Of these, one is working for license of Academic Class; thirty-three for Second Class, and the remainder are either working for Third Class, or without reference to immediate obtainment of license.

QUEBEC.

The *Blue Book*, containing the Report of the Superintendent of Education of the Province of Quebec for the scholastic year 1877-78, has lately been issued from the Department of Public Instruction. The volume is quite large, and full of interesting and instructive details on the whole Educational system of the Province. Its contents are:—the Superintendent's Report, addressed to the Provincial Secretary of the Province, with five appendices.

No. I. On Reports of School Inspectors:

No. II. On Normal Schools.

No. III. Monetary Tables—*i. e.*, amount levied for Public Instruction in the Province of Quebec for the year 1877-78; and then follows a table of superior Educational Institutions for the same period, with amounts appropriated to them.

No. IV. Minor Tables—*e. g.*, books sent to the School Inspectors to be given as prizes, number of pupils who have attended Normal Schools, limits of each Inspection District, salaries of Inspectors, &c., &c.

No. V. Minutes of the proceedings of the Roman Catholic and Protestant Committees of the Council of Public Instruction.

We shall confine our remarks in this article to the able, clear, and in not a few of its details, satisfactory Report of the Hon. G. Ouimet, Superintendent of Public Instruction. It is pleasing to have to note such progress as the following figures incontestably establish :—

Increase in	School Municipalities over previous scholastic year,	18
do.	in School Divisions,..	40
do.	in School-houses,	119
do.	in Schools (under control),	94
do.	in number of pupils,	2063
do.	in average attendance,	1673

In reference to the new School-houses which have been erected, the Superintendent remarks : "I would direct attention, in particular, to the fact that the 119 new school-houses erected have been built upon plans supplied or approved of by me; it suffices to say, that of this number there are none to which the severe criticisms of the Inspectors can apply."

It might be supposed, on reference to the statistics, that, in respect to Academies and Model Schools there has been a falling off, but on this point the learned Superintendent says :—"I think it my duty to explain that it would be wrong to conclude from this circumstance that we have retrograded. In one of my past reports, and in my circulars, I have insisted on a better classification of our schools. I had perceived that several institutions, styling themselves Model Schools or Academies, were far from meriting these titles. Consequently, the Council of Public Instruction, in making the distribution of the Superior Education Fund, according to the Inspectors' reports, thought it right to increase the list of Elementary Schools, by curtailing that of Model Schools and Academies. In reality, therefore, there has been no diminution, but a rectification." There is further evidence of progress in the past scholastic year over the previous one in the great increase of pupils studying the principal subjects of the compulsory programme. That increase is very marked in the following subjects :—

In History,	5,532
" Arithmetic,	6,193
" Book-keeping,	1,758
" Geography,	4,852
" Agriculture,	2,960
" Mechanical Drawing,	12,563

These facts prove that the Province of Quebec is not stationary in the great work of Education, notwithstanding the great difficulties with which it is beset. The next subject referred to in the Superintendent's Report is School Inspection, and on this head there is no uncertain sound. The Superintendent speaks emphatically on the benefits and necessity of thorough School Inspection to the growth and efficiency of our educational system. "Without inspection," he says, "it is impossible to work a system of Schools any more than any other public organization." "The *inspection bulletins* are the new weapon placed in the hands of the Superintendent."

A specimen *inspection bulletin* is then given. "The Inspector," continues the Superintendent, "fills up his formula after his visit to each school, and, when he has completed his tour through a municipality, he is obliged to forward me, under cover, the bulletins of all the schools in such municipality. By means of this system, the Superintendent can always arrive at an understanding of the the manner in which the local authorities fulfil their duties, and of the spirit with which they are animated."

The law requires that the Inspector shall visit each school in his district twice a year, and the Council of Public Instruction has laid down the principle that each Inspector should not have more than 100 schools to visit;" "but," continues the Superintendent, "it has been necessary to depart from this principle, and a double visit is still an impossibility for more than one Inspector. There is, therefore, reason, I repeat, to increase the Inspection staff." With respect to the Inspection system itself, it only requires to be completed by the appointment of two *general* Inspectors.

After some remarks in regard to the Book Depository, the question of Scholastic Exhibitions was taken up. The success of the Provincial Scholastic Exhibition at the last grand universal congress held at Paris is referred to with commendable pride, and all Educational Institutions throughout the Province of Quebec are earnestly recommended "to take measures immediately for contributing to the Provincial Exhibition, to be held next September at Montreal, or to a General Exhibition at Ottawa."

The Canadian Academy of Art, advocated by the Governor General last summer in a speech delivered before the Ontario Society of Artists, is said to be far in process of formation. A Constitution has been drawn up, and arrangements are in progress for holding the first annual exhibition at Ottawa during the approaching Session of Parliament. Subsequent annual exhibitions are proposed to be held in the cities of Halifax, St. John, Quebec, Montreal and Toronto.

Official Department.

NOVA SCOTIA.

The Council of Public Instruction has adopted the following Regulation, providing for the organization of an Educational Association under Provincial sanction and encouragement:

THE EDUCATIONAL ASSOCIATION OF NOVA SCOTIA.

The Superintendent of Education shall have authority to assemble annually in either Halifax or Truro, or at any other place which may be approved of by two-thirds of the Executive Committee hereinafter provided for, an Educational Association, whose object shall be to promote the efficient operation of our Public School System, and the professional improvement of its own members by the discussion of educational questions.

I. The Association shall be composed as follows:

1. The Superintendent of Education, the Principal and Professors of the Normal School, the Provincial Examiners for Teachers' Licenses, and the Inspectors of Schools, shall be *ex officio* members of the Association.

2. All members of the late (voluntary) Educational Association, all licensed Teachers, the Chancellor and Fellows of the University of Halifax, and the Presidents and members of the Faculties of the various Colleges affiliated therewith, may become members of the Association by enrolment and the payment of such fee (not exceeding one dollar) as the Association itself may determine.

II. The Association shall be directed as follows:

1. The Superintendent of Education, the Principal of the Normal School, and seven persons chosen annually by the Association from among its members, shall constitute an Executive Committee. This Committee shall have control of all funds raised by the Association, and shall appoint its own Secretary-Treasurer to receive those funds and disburse them under the direction of the Committee. The Committee shall also determine the days of the year on which the Annual Meeting of the Association shall be held, and the programme of exercises for each meeting (*vid. infra*, 6).

2 The Association shall appoint a Secretary, and, if necessary, an Assistant Secretary, who shall keep a record of the proceedings of each meeting, and forward a report to the Minister of Education.

3. The Superintendent of Education shall preside at the meetings of the Association and of the Executive Committee. At his request another member may preside, and in his absence the Association or Committee shall choose its own presiding officer.

4. The Superintendent of Education is authorized to use the Normal School Building and appliances for the meetings of the Association when they are held in Truro, and the Principal and Professors will aid to the extent of their power in promoting the success of such meetings. The Pupil-Teachers will be admitted to the exercises, but not as members of the Association, save when enrolled under Section I. 2.

5. Teachers can claim the same privileges in respect of attendance at meetings of the Association, as are given them by regulation in regard to attendance at District Associations.

6. The Superintendent of Education shall have, in respect to the first meeting of the Association, the power conferred on Executive Committee by I. 1.

ONTARIO.

On and from the 1st day of January, 1880, it is proposed to only allow thirty-three and a-third per cent on all sums appropriated by the Trustees for purchases from the Educational Depository or Booksellers.

S. P. MAY,
31st December, 1879. Depository Superintendent.

Readings and Recitations.

LET IT PASS.

Be not swift to take offence;
Let it pass!
Anger is a foe to sense!
Let it pass!
Brood not darkly o'er a wrong;
Which will disappear ere long;
Rather sing this cheery song—
Let it pass!
Let it pass!

Strife corrodes the purest mind;
Let it pass!
As the unregarded wind,
Let it pass!
Any vulgar souls that live,
May condemn without reprieve;
'Tis the noble who forgive.
Let it pass!
Let it pass!

Echo not an angry word;
Let it pass!
Think how often you have erred;
Let it pass!
Since our joys must pass away
Like the dew-drops on the spray,
Wherefore should our sorrows stay?
Let it pass!
Let it pass!

If for good you've taken ill;
Let it pass!
Oh, be kind and gentle still!
Let it pass!
Time at last makes all things straight;
Let us not resent, but wait,
And our triumph shall be great;
Let it pass!
Let it pass!

Bid your anger to depart;
Let it pass!
Lay those homely words to heart;
"Let it pass!"
Follow not the giddy throng;
Better to be wronged than wrong;
Therefore sing the cheery song—
Let it pass!
Let it pass!

—*All the Year Round.*

THE LESSON.

A teacher sat in a pleasant room,
In the waning light alone;
Her head was bowed in anxious thought;
With the work and care the day had brought,
She had faint and weary grown.
And the task that seemed light in the morning's ray.
As she thought of it now, at the close of the day,
When weary with toil, and faint with care,
Seemed more than human strength could bear.

Since the scholars had left her, one by one,
Nearly an hour had flown;
She had given them each a kind good night,
And while they lingered her eyes were bright,
But they dimmed with tears when alone.
She had borne the burden the day had brought,
The daily task she had faithfully wrought,
And now, to solace her weary mind,
A lesson of life she sought to find.

The work and cares of the day she scans,
But no lesson from them receives.
"The day had no lesson for me," she said:
"A lesson, I'll read in the Book instead,"
And she opened her Bible leaves.
When lo! the lesson she had sought in vain,
To draw from her fainting and weary brain,
At once from the holy page she drew,
Though always the same, yet ever new.

"Establish Thou the work of our hands;"
'Twas this that met her gaze—
The words went up from her lips like prayer;
And as she read she treasured there
A lesson for many days.
Not alone for her let the lesson be,
May it come as well to you and me.
Let our prayer be the words of holy writ,
"Yea, the work of our hands establish Thou it."

Exchange Department.

In this department questions submitted by teachers will be inserted, that they may be discussed by those who are desirous of either giving or receiving light in regard to them.

1. Is the word "ordinary" correctly used in the following sentence from Dr. Morell:—"An ordinary prosperous Englishman?"—*T. H. C.*

2. Should not the word "to" be replaced by the word "till" in the sentence, "To the middle of the 15th century?"—*T. H. C.*

3. Is the word "previous" correctly used in this sentence? "The raft into which the timber is formed previous to being floated down the river, etc."—*T. H. C.*

4. How should the voice be managed at the exclamation point when reading? In some cases should not the voice be allowed to fall at a period? as in this example:

"God! let the torrents, like a shout of nations,"
"Answer! and let the ice plains echo, God!"

Would it be a fault to let the voice fall at the end of the second line? The piece from which my example is taken (Hymn in the vale of Chamouni) has nearly every line ending with an exclamation point, and to my ear it does not seem well to keep the voice always on the rising inflection.—*M. D.*

5. How should "the while" be parsed in this example:
"And tears are in her eyes the while she makes her humble plaint."
Should it be parsed as an adverb relative to makes, or as a noun (meaning "the time") and governed, by some preposition understood, as "during"?

6. In this example:

"If I could cry away mine eyes,"
"My tears would flow in vain;"

Should "If I could cry" be parsed as Subjunctive, Past, and "would flow" as Potential, Past? And in all cases is the presence of a conjunction before a verb sufficient to place it in the subjunctive, or must it express futurity as well as contingency?—*M. D.*

7. I would like some one to give the best methods of keeping school registers through the columns of the JOURNAL.

8. After examining "Mason's Grammar," I do not exactly understand when the auxiliaries *would, should, may* and *might*, of what is often called the potential mood, should be used as principal or as auxiliary verbs. I would be thankful to receive some light on this subject through the columns of the C. S. JOURNAL.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

WATERLOO.—The next meeting will be held in the Central School, Berlin, on the 30th and 31st January, 1880. *Programme:* Arithmetic, R. Alexander; Reading, S S. Herner; Grammar, E. Ruby; Should the Provincial Teachers' Association be made Representative? W. F. Chapman; Is Provincial Uniformity in Text Books desirable? T. Hilliard; Chemistry, D. Forsyth; Essayists, Misses Gray and Young; Selection of time for next promotion examination. An hour for general business each day. Natural Philosophy (Moments), M. Hallman. Question Drawer. On Friday evening Jas. Hughes, Esq., I. P. S., Toronto, will deliver a lecture in the Town Hall on the Kindergarten, and on Saturday will take up Industrial Drawing, Phonic Reading and Object Lessons.
C. B. LINTON, Secretary. R. ALEXANDER, President.

DUNDAS.—February 5th and 6th, 1880. Thursday.—10 a.m., Roll Call and Reading Minutes, Correspondence, Appointment of Committees. 11 a.m., Address, Mr. P. Jordan. 11 30 a.m., "Teachers' Library," Mr. A. C. Smith. 1 30p.m., "The Teacher," Mr. O. D. Cassleman. 2 p.m., "Township Boards," Mr. A. Brown, I.P.S. 2.30 p.m., "School Law," Mr. A. Allison, Jr. 3 p.m., "Drawing," Mr. L. Welch. 3.30 p.m., Question Drawer. Friday.—10 a.m.,

"Geography," Mr. A. C. Cassleman. 10.30 a.m., "Grammar," S. Woods, Esq., Kingston. 11.30 a.m., "Grammar," Mr. A. H. Weagant. 1.30 p.m., "Arithmetic," Mr. A. A. Whittaker. 2.30 p.m., "Competitive Examinations." 3 p.m., "Partial Payments," Mr W. H. Irvine, B.A. 8.30 p.m., Question Drawer. S. Woods, Esq., M.A., late Rector of Coll. Institute, Kingston, will deliver his popular lecture on the "Life and Times of Goldsmith," on Thursday evening, February 5 h, 8 p.m., in Merkey's Opera Hall.

A. BROWN, President. IRWIN STUART, Secretary.
Morrisburg, Jan. 15, 1880.

NORTH PERTH.—Semi-annual meeting in the Central School, Listowel, on the 20th and 21st days of February, 1880. *Programme.*—1. Natural Philosophy, J. Crozier, B.A.; 2. Introductory Algebra, J. Draper; 3. English History (4th Class P. S.), D. D. Ellis; 4. Reading by Convention (The Prairies), page 49, IV. Book, B. Rothwell; 5. Physical Science as an Educator, R A. Coleman, B.A.; 6. Pupils' Reports, S. Ranton; 7. Mode of Conducting Promotion Examinations, R. Munro; 8. Analysis of Gray's Elegy by Convention, page 356, IV. Book, J. Wilson, B.A.; 9. Geography of British Empire, S. J Kilpatrick; 10. Shall the Provincial Association be made representative? H. Dickenson; 11. Election of Delegates to Provincial Association. An Entertainment on Friday evening. Return tickets on Stratford & Huron R'y at *one and a third fare* on presentation of Secretary's certificate at beginning of journey. Teachers are requested to bring Fourth Readers, and are expected to come prepared to discuss the above programme, especially subjects 4 and 8.

R. ROTHWELL, Prest., Listowel. H. DICKENSON, Sec'y, Stratford

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WEST VICTORIA.—The teachers of West Victoria held their half-yearly meeting at Woodville on Dec. 29th and 30th, 1879.

In the absence of Mr. Wood, President, Mr. Reazin, Inspector, was moved into the chair.

Mr. Cundal opened the Convention by discussing the subject of Arithmetic. Mr. Gilchrist, of Woodville, then gave a lesson on Grammar. His lecture was very interesting. In the afternoon, Mr. Reazin explained his method of introducing reading to junior classes; this called forth considerable discussion. Mr. Dobson, of Lindsay High School, then gave some useful hints on factoring in Algebra, after which Geometry was discussed by Mr. F McEachren; both gentlemen evoked considerable discussion. In the evening Mr. Dobson gave a very instructive and interesting lecture on "Canadian Literature" to a very large and attentive audience.

On the second day, Mr. Knight, of East Victoria, read an essay on Composition, and Mr. Shaw, of Omemee, read one on Prosody. Each gentleman treated his subject in a masterly manner. At the close of the business of the Convention, the following motion was made, which met the approbation of all present. Moved by Mr. Cundal, and seconded by Mr. Gilchrist,—That this Convention very much regrets that Mr Dobson is about to leave our midst; and as he has always cheerfully rendered us material assistance at our meetings, the thanks of this Convention are tendered to him. Although the Convention was held during the holidays, it was a decided success. JOHN CUNDAL, Secretary.

EAST KENT.—The Association met in Ridgetown on Friday, October 31st and Saturday, November 1st, 1879, with the President, Mr. Masales, in the chair. There was a large number of teachers present, who entered into the discussion of the subjects on the programme with lively interest. An excellent essay on "Consecutive Thought" was read by Mr. Masales. The essay will be published. "Amusements in Public Schools," by Mr. Ward, called forth remarks from the majority of the fraternity present. "Geography" was taken up by Mr. Frampton, who treated it in his usual lively manner, Mr. McGillivray followed with "Factors and Multiples in Arithmetic." "Studies in Public Schools" was next discussed, and a resolution was passed that this Association concur with the resolution relating to optional subjects on second class programme passed by the West Bruce Teachers' Association at their last meeting. "Prizes in Public Schools" was taken up by Mr. Harrison, I. P. S., who was followed by several teachers. An entertainment was given by the teachers on Friday evening in the Porter Opera Hall.

WAL. S. MCBRAYNE, Secretary.

REVIEWS.

THE WINTER'S TALE. Edited, with notes, by Wm J. Rolfe. New York: Harper & Brothers. The preceding volumes of Rolfe's school edition of Shakspeare's plays have been highly commended by the most competent critics of the day. The *Winter's Tale* is quite equal to the other volumes of this excellent series, and is in every respect admirable. The introduction, the critical comments and notes are just what they ought to be for the purposes of the school-room, and render the volume equally acceptable to the general reader, whether his taste inclines to linguistic or æsthetic criticism. We heartily recommend the work to the student, the teacher, and the general reader.

AN ELEMENTARY GREEK GRAMMAR. By William W. Goodwin, Ph. D., Eliot Professor of Greek Literature in Harvard College. Second Edition. Boston: Ginn and Heath, 1879. Pp. xxviii. and 393, octavo. This is a piece of scholarly work done by a competent man. In the etymological part the author follows the Schulgrammatik of Cuotius closely. The syntax of the moods and tenses is very good. Other valuable features are: A catalogue of the verbs used in classic Greek, which present difficulties to the learner on account of peculiarities in their conjugation; a short but good account of Greek versification, and full indexes. Judgment has been displayed throughout in the arrangement and selection of the matter. The printers have done their part well. On the whole, we are not acquainted with any better Greek grammar of the same size.

A SYSTEM OF MORAL SCIENCE. By Laurens P Hickok, D.D., LL.D. Revised with the co-operation of Julius H Seelye, D.D., LL.D., President of Amherst College. Boston: Published by Ginn & Heath, 1880. pp. 298, octavo. This is a revised edition of a college text-book which has been in use for twenty-five years in the United States. We pity the students who have been compelled to study it. In the first place, the language used frequently lacks clearness, and is sometimes ungrammatical. Then the proportion which reasoning bears to assumption throughout the volume, reminds us of the ratio between Falstaff's meat and drink —"but one half-pennyworth of bread to this intolerable deal of sack.' Again, some of the few attempts at reasoning it contains are rendered invalid by confusion of thought.

"The ultimate Rule of Right has been deemed obscure to some, and thought to involve a self-contradiction by others, but which is now so presented as scarcely to admit of partial or mistaken apprehension."—*Preface to the Revised Edition.*

"Widely different and very conflicting theories have been advanced; and as this is so fundamental for the science of morality, the system has of course received its whole character from its foundation-principles."—*Page 23.*

The redeeming features of the work are that the printers have done their part well, and that it gives a tolerably fair account of what we ought and ought not to do.

THE TEACHER'S HAND-BOOK OF ALGEBRA; *containing Methods, Solutions, and Exercises illustrating the latest and best Treatment of the Elements of Algebra, by J. A. McLellan, M.A., LL.D., High School Inspector for Ontario.* When some months ago it was rumored that a mathematical treatise was being prepared by Dr. McLellan, scepticism existed as to the extent to which even he could impart freshness to so threadbare a subject as elementary algebra. The book has appeared, and the scepticism has disappeared. We venture to say that neither in England, the United States, nor Canada has a work been published covering the same ground in which will be found so much originality, such elegance of methods and such vigor of treatment; in either of the former countries, if properly introduced, the book will be in as great demand as in our own. It is not a formal treatise on Algebra, but consists rather of a series of essays on branches of the subject which are of great importance, but which are strangely ignored in all other text books. The first four chapters are on Substitution and Horner's Division, Symmetry, Factoring, Measures and Multiples; the fifth and sixth are on Equations; and the last consists of a collection of miscellaneous examples. The short and refined methods which add so much to the interest of the subject and to its value as an instrument of mental training, but which heretofore have been known only to our best teachers, will be found in some part of the book As one amongst many examples of elegant reasoning we recommend our readers to page 87. Some of the neatest solutions we have had the pleasure to meet we found in Chapters V. and VII. The chapters on Symmetry and Factoring mean a fresh intellectual life in mathematics to those who have not enjoyed the advantages of having the best instructors. The work is perhaps but the natural product of the great revolution in the mathematics of our High Schools which has taken place within the last few years, and which Dr. McLellan has done so much to bring about. Half a dozen years ago such a publication would have been out of place in Canada. Examiners received any solution of a problem, and were glad to get it; but now, and especially in Algebra, every competent examiner will distinguish between a candidate whose answers are marked by neatness and elegance, and one whose awkwardness almost destroys the merit of being right. Dr. McLellan's work should be in the hands of all teachers of mathematics, and in

those of their senior pupils. All candidates at the examinations for Teachers, and the Intermediate and Matriculation Examinations, should be acquainted with its methods.

MAGAZINES.

THE CONTEMPORARY REVIEW for January has been received from Strahan & Co., Paternoster Row, London, and contains: "England in the Eighteenth century," by Karl Hillebrand, an able vindication of the much calumniated 18th century, which the writer considers "the most truly human and fruitful of all the ages"—an "era of increased political liberty, of revival in literature, and of remarkable religious development." In "Landlords and Laws," Professor Blackie discusses, with characteristic eloquence and force, some of the burning questions connected with landed property and the ownership of the soil. He argues that no man "is, by the law of nature, entitled to make a testament so as to have it respected after his death." The general tenor of the article is in condemnation of "large properties," and certainly the Professor makes out a very good case. "Justinian," by Robert Buchanan, is a poem that all will read with interest. The lesson of the poem, taught by no feeble poetic power, is that pure rationalism is unable to satisfy the deep yearnings of the soul, notwithstanding its announcement that

> "Pan and Apollon and great Zeus are dead,
> And Jesus Christ hangs cold upon the cross.
> Nay more, the light of Science newly born
> Hath slain the night of the Divine Idea.
> * * * * * * * *
> Henceforth a grievous shadow gaits the earth,
> While man, the fruitage and the flower of things,
> Walks fetterless and free."

"Herbert Spencer on the Data of Ethics" is an able criticism, by Professor Calderwood, of Spencer's "Data of Ethics." The other articles are: "The Letters of Charles Dickens, by Matthew Browne; "The Character and Writings of Cyrus the Great, in connection with a recent discovery," by Canon Rawlinson; "The Relation of Animals and Plants to Time," by Professor Mivart; "The Chinese Drama," by Robert K. Douglas; "Philosophy in the last Forty Years," first article, by Professor Lotzse; "Contemporary Life and Thought in Italy," by Signor Roberto Stuart. On the whole this is a most able and interesting number of a periodical which has few equals and no superiors.

THE NORTH AMERICAN REVIEW has been received from D. Appleton & Co., N.Y. It contains: "The Catholic Church and Modern Society," by Cardinal Manning; "The Third Term," by T. V. Houx; "M. De Lesseps and his Canal," by Rear-Admiral Daniel Ammen; "Now and Then in America," by G. A. Sala; "The Emancipation Proclamation," by James C. Willing; "Recent English Books," by Mayo W. Hazeltine.

THE WESTERN, January-February, has been received from the publishers G. I. Jones & Co., St. Louis "My Lorelei" is an interesting story by Octave Thanet; "Women as Architects," by Martha N. McKay, considers how much women are needed and what they can do as architects; it a thoughtful and suggestive article. In "The Spelling Reform," M. B. C. True utters some wholesome truths which the advocates of the so-called "reform" would do well to ponder; "Nagananda," by Wm. M. Bryant, is a very readable account of a Buddhist drama of that name. There are, besides, Book Reviews and Current Notes.

THE JOURNAL OF SPECULATIVE PHILOSOPHY has been received from G. I. Jones, St. Louis. Its contents are "Kant's Critique of Pure Reason," criticised and explained by himself, by A. E. Kroeger. "The Method of Thought," by Meeds Tuthill; "Professor Card on Kant," by Dr. Stirling; "Kant's Deduction of the Categories, with special reference to the views of Dr. Stirling," by Prof. Caird; "Notes and Discussions and Book Notices." We can confidently recommend the Journal not only to students of Philosophy, but to all who wish to keep "posted" on the very latest phases of speculative philosophy.

The February number of the *Atlantic Monthly* contains, besides 144 pages of the usual interesting *melange* of poetry. prose, fiction, history, criticism, and miscellaneous essays, a supplement of 24 pages, which is filled with an account of the breakfast given by the publishers of the magazine in honor of the seventieth birthday of Oliver Wendell Holmes. This entertainment appears to have been a great success, and the poems and speeches are well worth reading. Dr. Holmes's poem, 'The Iron Gate," read in response to the toast of "The Autocrat of the Breakfast Table," is a remarkable production for a man of three score years and ten. Among the other contents is an able, readable and very instructive article on "Pessimism," by Goldwin Smith, which is likely, we fancy, to prove distasteful to the official defenders of the "established creed." Mr. Howells' novel, "The Undiscovered Country," continues to increase in interest. The remaining articles are exceedingly interesting.

THE ENGLISH PRIMITIVE METHODIST MAGAZINE comes to our table with an inviting and varied bill of fare. As may be seen by its topics, the reader has much to stimulate his intellectual and enrich his spiritual nature. The January number is adorned with a portrait and several engravings. "Councillor Kerwood's Investment and what came of it" is a very readable article, by the Rev. George Shaw. George Warren has his fifth chapter on "Revivals of Religion," which is written with great ability. Many will be interested in the "Historical Settin of Select Hymns."

SUNDAY AT HOME, with its brief but beautiful homily for each Sunday in the month, will afford suitable matter for meditation to such as are prevented from attending the ministrations of the house of God, while it cannot but be read with delight by a much larger class. We have only glanced at a few of the many subjects contained in this useful monthly.

APPLETON'S JOURNAL for February contains "A Stroke of Diplomacy," from the French of Victor Cherbuliez (conclusion); "The Comedy Writers of the Restoration;" "Miracles, Prayer, and Law," by J. Boyd Kinnear; "Life in Brittany;" "The Seamy Side," by Walter Besant and James Rice; "Teaching Grandmother—Grandmother's Teaching," by Alfred Austin; "The Russian Gypsies" by Charles G. Leland; "First Impressions of the New World," by the Duke of Argyle; "Editor's Table" and "Books of the Day."

THE POPULAR SCIENCE MONTHLY.—The February *Popular Science Monthly* is of rare excellence; its invoice of fresh scientific discussion is most attractive, and in real instructiveness puts it beyond all its competitors. The first article, on "The Origin of the Criminal Law," by William W. Billson, will be equally interesting to lawyers and to the public. It is a striking chapter in the science of social progress, and brings out a view as novel as it is important. The second paper, illustrated, on "Laporte's World of Plants before the Appearance of Man," develops a new view of the relations of primitive life, which is of remarkable interest. "How Typhoid Fever is Conveyed," by Dr. T. J. Maclagan, is a sanitary discussion of great moment to all households. One of the most charming papers in this number is by Walter Nordhoff, on "Hanoverian Village Life." It is a vivid picture of the quaint and curious usages that continue as they have gone on for centuries in the social organism of a primitive German community. "Maps and Map-making before Mercator," by Judge Daly, President of the American Geographical Society, is a very instructive essay on the early progress of geography and the art of its representation. It is full of good illustrations Dr H. Carrington Bolton gives an instructive account of "Ancient Methods of Filtration," which will attract all interested in chemistry and the development of the arts. Professor Bain closes his analysis of the character and works of Mill; and Dr. S. Austen Pearce contributes an important paper on the science of music, under the title of "Imperfections of Modern Harmony." "Daylight in the Schoolroom," 'Hygiene in the Higher Education of Women," by Dr A. Hughes Bennett, and "Artesian Wells and the Great Sahara," by Lieutenant Schroeder, are papers of equal and varied interest; as are also "The Origin of the Gypsies," and "Prehistoric Records." There are a sketch and portrait of Professor Benjamin Silliman and the editorials and popular miscellany are unusually full and attractive. The conductors of this valuable periodical seem determined to keep the lead in their supply of entertaining and substantial reading for the people.

HOW THE EARTH WAS FIRST MAPPED OUT.

What these early maps were we do not know, but can form a reasonable conjecture. The earth at that time was supposed to be a flat circular plain, or disk, the broadest part being from east to west, which was entirely surrounded by an ocean, or great river, that washed it upon all sides. In about the centre of this plain Greece was supposed to be situated. The great central sea of the inhabited region was the Mediterranean. The farthest point known at the west was the Straits of Gibraltar, then called the Pillars of Hercules. The southern part comprised the north of Africa as far as the deserts; while the region north embraced the countries bordering upon the Mediterranean, and an unknown hyperborean land farther to the north, with the Euxine and Caspian Seas at the northeast. The farthest eastern point known was about the western limit of India. This was what would then be contained in a map as a representation of the earth. The sun was supposed to pass under and around this flat plain, which was then the mode of accounting for the changes of day and night. The space beneath was supposed to be a great vault, called Tartarus, the abode of the spirits of the wicked among men, as the region corresponding to it, above the plain, was the heaven, or abode of the gods. The unknown regions beyond the Pillars of Hercules was filled up with creatures of the fertile imaginations of the Greeks. To the northwest and north were the Cimmerians, a people living in perpetual darkness; and the hyperboreans, a race supposed to be exempt from toil, disease, or wars, who enjoyed life for a thousand years in a state of undisturbed serenity. To the west of Sicily were the enchanted islands of Circe and Calypso, and the floating island of Eolus. A little to the north of the Pillars of Hercules was the entrance to the infernal regions; and far out in the Western Ocean, beyond the limits of the known earth, was the happy region called Elysium, a land of perpetual summer, where a gentle zephyr constantly blew, where tempests were unknown, and where the spirits of those whose lives had been approved by the gods dwelt in perpetual felicity. Here, also, were the gardens of the Hesperides, with their golden apples guarded by the singing nymphs, who dwelt on the River Oceanus, which was in the extreme west, and the position of which was constantly shifted as geographical knowledge increased.—*From "Maps and Map-making before Mercator," by Chief-Justice Daly, in Popular Science Monthly for February.*

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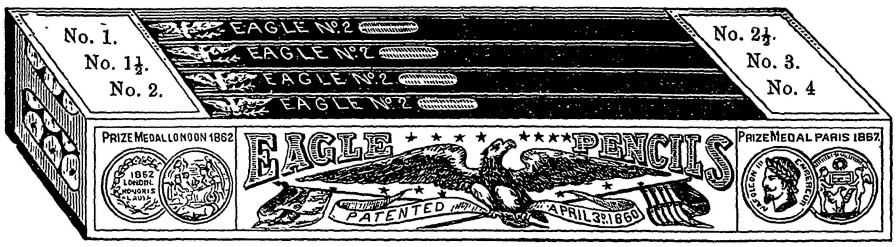

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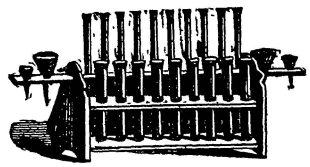

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An Honorable Mention at Paris Exhibition, 1878.
Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction, Quebec.
Recommended by Chief Superintendent of Education, New Brunswick.
Recommended by Chief Superintendent of Education, Nova Scotia.
Recommended by Chief Superintendent of Education, British Columbia.
Recommended by Chief Superintendent of Education, Manitoba.

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

AMENDMENTS TO THE ONTARIO SCHOOL ACT.

In the Official Department of the present number of the JOURNAL will be found the amendments to the Public Schools Act, made during the present session of the Ontario Legislature. Section one gives rural trustees the power to open the schools on the third instead of the eighteenth of August. The legal holidays are not changed, six weeks are still to be regarded as the regular vacation, and no government or municipal allowance will be given for this time. It is to be regretted that miserable jealousy of the teacher should lead to an agitation in favor of shortening the summer vacation. Such an agitation has begun, however, and promised to assume large proportions. Probably no better way could have been taken to meet and stop this agitation than that adopted by Mr. Crooks. He promptly met and objected to the passage of the amendment of Mr. Watters to reduce the midsummer holidays to three weeks, and introduced his own amendment, which is to be of a temporary nature, unless largely adopted by rural trustees throughout the province. We hold that it is decidedly wrong to reduce the vacation in summer. It is unwise in the interests of pupils, parents and teachers. If, however, trustees largely avail themselves of the provisions of the amendment, we hope they will be compelled to pay the teacher for the extra time taught, and to send their children regularly, under penalty of a fine for every day's absence not caused by sickness. Unless this is done, Teachers' Associations will have to become Unions, whose members will be bound not to teach a school where short holidays are insisted on by the trustees. The teachers have this question in their own hands, and we hope they will settle it properly.

Section two regulates an amendment of last session, which provided that non-residents, even if property owners, should be liable to pay fees. The present amendment allows non-residents to send their children to a school provided they have property in the section on which they pay a sum at least equal to the average rate paid by the residents of such section. Trustees are to be allowed to charge as much as fifty cents per month for the children of other non-residents.

Section three makes needed amendments, which will tend to the easier and more equitable working of Union School sections.

Section four greatly simplifies the work of taking the school census and collecting the school rates. The township assessor is to set down in his roll the number of children between five and sixteen, and the township clerk has to make a return of the number of children of school age to the trustees of each section on or before the first day of July of each year. The expenses of assessing, collecting and paying school rates is to be borne by the municipality. Trustees will undoubtedly hail this clause with delight.

Section six makes it clear that the twenty-ninth section of last session does not apply to furniture, appliances, ordinary repairs, &c. Some rabid opponents of the public schools held that the trustees could not put in a pane of glass without calling a meeting of the ratepayers of the section.

Section eight is perhaps the most important amendment of the present bill. A great deal of litigation and other trouble has arisen from the quashing by the courts of local by-laws for the formation, alteration, or dissolution of school sections, unions, township boards, &c. This section provides that such by-laws shall be absolutely legal and valid "when they have been submitted to and confirmed by the Minister of Education." This may seem a large power to place in the hands of the Minister of Education, but it is an evidence of the need of the change, as well as a merited compliment to Mr. Crooks, that the Hon. Mr. Cameron, when leader of the Opposition in 1877, and subsequently Mr. Meredith, urged the advisability of giving even more power to the Minister of Education in settling local disputes, as well as in rendering local action valid.

Section twelve enables the Minister of Education to compel the attendance of witnesses at any inquiry "which he may institute, make or direct," without appealing to any court.

On the whole, the provisions of the amendments are desirable, and Mr. Crooks is to be congratulated on the firmness he showed in resisting encroachments on the essential principles of the law, as well as on the care shown in the preparation of the needed changes.

HIGH SCHOOL RIVALRY.

The remarkable impetus given to our High Schools by the improved regulations framed under the provisions of the legislation of 1871 marks an important period in our educational history. With a programme of studies adapted to the requirements of a new but progressive community, and the adoption of

methods of thorough instruction, new life and vigor took the place of the comparative apathy that was previously exhibited by the public towards the Grammar Schools. With increased aid from Government, and enlarged powers assigned to Boards of Trustees, the efforts put forth by local authorities have resulted in building up a class of institutions for secondary education not surpassed in efficiency by similar schools in any other land. The official reports of the High School Inspectors, and the published results of Teachers', Intermediate, University and other examinations, have furnished the public with a fair criterion of the character and efficiency of the High Schools and Collegiate Institutes. The facilities afforded the community for forming an estimate of the actual work done, have been both numerous and various, and the judgment of an intelligent public has not been far wrong.

The comparative merits of different schools have also been freely canvassed, and points of excellence or weakness have readily been discovered. When false economy on the part of Boards has kept an institution low, the enterprise and progress evinced in other towns have often aroused Trustees from a state of lethargy and indifference. Hence have followed, on the part of School Boards, a desire to procure improved accommodation and a sufficient number of properly qualified teachers, and on the part of Masters the application of the best methods of instruction and management.

So far, such tendencies furnish much reason for satisfaction, but we regret to notice here, more particularly, a feature which unfortunately has lately sprung up in connection with the progress of our schools. With a certain amount of competition we find no fault. Indeed, without comparisons between different institutions, it is doubtful if many improvements would have taken place so promptly. To gather in students from a distance is in no way objectionable, if no improper methods are adopted for such a purpose. To give, in a prospectus, a plain statement of the character and progress of a school may not be amiss, but to make references of a disparaging nature to other institutions cannot be defended. To induce students to leave localities where well-equipped schools exist, may give some temporary stimulus to an already overgrown institution, but it is extremely doubtful whether such a course is productive of lasting advantage. The tactics used by competing lines of steam-boats or rival commercial houses would scarcely appear dignified if resorted to by Collegiate Institutes. People look for different relations between educational establishments, and the "puffing" which an auctioneer might employ in selling his merchandise would scarcely answer what is expected from High School Masters zealous in advancing the character of the institutions they control. A feeling of regard for the rights of others should not be lost sight of. Like the clergyman who would not think of encroaching upon the "parish" of his brother minister, there should be some limit to the field from which a master strives to recruit his numbers. Professional respect will not justify the medical man in depriving another of his patients, and the lawyer is not expected to infringe upon the rights of his "learned friend." Similar relations are, no doubt, recognized by teachers who have, perhaps, few necessities for violating them. The student that can be led away from a good school is seldom a very desirable acquisition for another. He who is diligent will succeed at any one of our many well-equipped High Schools or Collegiate Institutes. The winner of a University Scholarship would have doubtless been just as successful had he come up from High School B as H. S. A. The intermediate candidate who was "plucked" last summer would probably have suffered a similar fate had he attended any other than the one in which his confidence is now shaken. Nor have "hints," in the shape of superior facilities for preparing for the Matriculation or other examinations, been the only features that have appeared prominent in announcements. The prize and scholarship system has appeared, and the High School is to enjoy increased advantages by liberality in paying students to attend. We are not prepared to say where such tendencies may end, but we know the effect must be anything but elevating. If the spirit of commercial rivalry becomes prevalent among our High Schools, masters must also prepare to meet the ups and downs to which mercantile affairs are liable.

We have looked at what is no phantom from an outside standpoint, but we express the sentiments of masters themselves. At the last meeting of the Teachers' Association the matter engaged the attention of the High School Masters" Section, and we believe the feeling was unanimous in deploring the growing evil. There can be little doubt that the remedy lies principally with the teachers themselves, and in a matter in which all are more or less interested a full understanding on some of the points to which we have referred would prove quite serviceable.

COUNTY MODEL SCHOOLS.

We regret exceedingly that County Model Schools are not to receive a larger grant at present. It is also a pity that the County grant in favor of those institutions is not made compulsory. The Counties benefit from those schools more than the particular towns in which they are situated, and they should be forced to contribute to their support, in case they are not generous enough to do so voluntarily. There are many who seem to consider that the trustees of the town in which a Model School is situated should receive all the Government and County grants to be disposed of as they deem best. This we hold to be wrong. The principal of the Model School deserves recognition. He is compelled to work from one to two hours extra per day during the Model School session, and in addition to this, his professional ability and experience are or should be deserving of recognition in a tangible form. He is paid by the town for teaching his class and managing his school; he should be paid by the Government for training the Model School students. It is not right that local authorities should be allowed to give him what they think right. It is not fair to leave him at their mercy. Some School Boards have dealt fairly with their Model School masters, but they are rather the exception than the rule. The Government has laid the additional burdens on these masters, and it should make their additional remuneration a certainty, by a provision that a part of its grant shall be for the master.

GEOGRAPHICAL NOTES—AFRICA.

The great geographical discoveries of 1879 have been chiefly in the African and Central Asian direction. These have been largely promoted by the military operations in Africa and Asia. Missionary labors have also stimulated exploration. Independently, however, of the war in South Africa, geographical research has been steadily prosecuted in Central, Eastern and Western Africa. In other parts of the world the explorer has also been busy. In these "Notes" we propose to give a summary of such geographical facts as may be of general interest.

Africa.—The main source of the Niger has at length been discovered by two French explorers, M. Zweifel and M. Moustier. These gentlemen started on their journey from Port Loko, on the northern branch of the Sierra Leone river in July last. Favored by the circumstance of a friendly alliance of two hitherto hostile tribes, they were enabled to penetrate to the Koranko country, where, on the 3rd of October, after crossing several branches of the Niger, they discovered the principal head stream on the frontier of Kissi and Koranko, and, singularly enough, near a place indicated on a map by Major Laing in 1822. The Binue branch of the river Niger has also been explored by Messrs. Ashcroft and Kirk in the Church Missionary Society's steamer *Henry Venn*. The much-debated question of an outflow of Lake Tanganyika has been settled by a verification of the fact. Mr. E. C. Hore, scientific member of the London Missionary Society at Ujiji, visited the river Lukuga during the last rainy season, and found it to be a large and very swift river flowing out of the great lake Tanganyika. He also descended the stream in a canoe, and, from the summit of the Kijanga ridge on the bank, he saw the river flowing westward as far as the eye could reach in the direction of the Lualaba.

It may be noted that, in addition to English explorations of Africa, there are also expeditions for discovery in that country provided under Portuguese and Belgian auspices. The latter was organized by the International Association which met at Brussels last year.

Two valuable and devoted lives were sacrificed last year in the promotion of African exploration: Rev. Dr. Mullens and Mr. Keith Johnston. Dr. Mullens has been long known as an indefatigable minister, in India and elsewhere, of the London Missionary Society. His visit to Canada will also be remembered. The great interest he took in the mission to Lake Tanganyika led him, with much self-denial, to volunteer to proceed to Ujiji in the Spring of 1879, to aid in the organization of the Church Missionary Society there. Gifted with scientific tastes and a love of geographical knowledge, he devoted much of his time to these pursuits. Mr. Keith Johnston, son of the eminent geographer, was the leader of the East African expedition to the head of Lake Nyassa. He left England early in the year, full of physical health and spirits, but the climate proved too much for him, and he succumbed about 120 miles from Zanzibar in June last. Other African items are deferred.

Certain papers have tried to make political capital out of the question of the price of text-books for schools. It has been stated that to Dr. Ryerson belongs the credit of issuing a table of maximum prices, beyond which books must not be retailed in Ontario. We are always ready to give all praise to the "venerable chief," who for so many years and with such remarkable tact and ability controlled the educational affairs of this province; but facts are facts. It was Mr. Crooks who in 1877 fixed a maximum price list for text-books, and that price in nearly every case was lower than it had previously been. In no case was the price of a book raised, even though the mechanical construction of most of them was greatly improved.

EXTRACTS FROM THE REPORTS OF HER MAJESTY'S INSPECTORS OF SCHOOLS IN ENGLAND.

The following selections relative to the teaching done in some subjects in English public schools, will undoubtedly prove interesting. They will serve to indicate to a certain extent the character of the teaching done in many of the elementary schools. They are also valuable as giving the thoughts of the inspectors concerning the subjects named and the methods of teaching them.

Mr. Routledge believes that history might be profitably banished to Schedule IV. He is forced to describe the task of teaching history as "Herculean," when the teacher is expected "to give solid instruction (in about forty or fifty hours per annum) on the history of four centuries, condensed as it is into a melancholy record of murders and rebellions, the names and dates of battles, and dry abstracts of constitutional laws, till the minds o fscholars may well become a perfect chaos."

"History," says Mr. Holmes, "is seldom taught; it presupposes a certain knowledge of geography, and if it be not taught from maps it had better be left alone." Mr. Cornish puts little value on history, if we are to judge from the following:—"History is not often taken as a subject for examination, and, judging of its value by the cases in which it has been chosen, I cannot rate it highly. Such stories as that of Alfred and the cakes, and Bruce and the spider, can be easily read in the ordinary reading books, and when you have subtracted such stories as these from the total there is not much left."

Mr. Blackiston seems to be very much of the same opinion:—"These who have either the knowledge or the grasp to treat the subject well are very few. The attention which ought to be paid to the matter of the reading books ordinarily used in schools should suffice to impress on children's minds the essential facts of English history, without needlessly burdening their memory with names and dates, as is done when history is offered as a class subject."

As a specimen of historical teaching in elementary schools Mr. Kynnersley gives the following:—"History is seldom taken in this district. The unpopularity with school children which the Saxon kings have long enjoyed still clings to them, and teachers dread the first stage. Those who have made the first plunge find the work easy and interesting to boys. Most of the text-books used in schools are very bad. A short time ago a class under examination pleaded ignorance of Jack Cade (among others) on the ground that he 'didn't come in their book.' It turned out to be the case, and the master said that he had never heard of that eminent reformer, whose low opinion of schoolmasters would have been marvellously fortified could he have foreseen this."

In regard to grammar, there is a divided opinion. With scarcely an exception, however, the inspectors consider the requirements of the lower standards too meagre, and recommended an extension. Almost with equal unanimity there is a feeling of disappointment with the general work of the upper standards. Mr. Brewer's opinion will be endorsed by the great body of teachers when he declares that "the mental discipline of the higher branches of grammar is far above that of its mere rudiments, or of what one is obliged to accept as proficiency in history."

Mr. Cornish has a good report to give :—"The spirit with which this subject has been taken in almost all schools, and the intelligent way in which it has been taught, is one of the most encouraging facts that I have to report."

It is otherwise in Mr. Haslam's district—the neighborhood of Bradford :—"It is scarcely surprising that grammar failures should be numerous. Sometimes half the children or more in the upper standards do not truly know a verb from a noun, will of themselves attribute gender and case to what they have rightly called a verb, and yet have been made to repeat such expressions as 'prepositional phrase' and 'potential mood,' of which I do not believe one certificated teacher in fifty himself knows the true meaning."

Mr. Fitch, although not quite so strong as this, has yet a little with which to find fault:—"I am not always satisfied with the manner in which these subjects are taught. By grammar is too often understood merely the definitions of the parts of speech, the power to recognize the words in a sentence and to label them with certain technical names. By a few of the best teachers it is so handled as to enlarge the learner's vocabulary, and to give him a truer sense of the meaning, relations, and uses of words. This is done, not by beginning with nomenclature and definitions, but by taking short sentences and asking in succession what each word tells us, and what part it plays in the expression of the whole thought; by showing how one word gives birth to another; and in what ways nouns are formed from adjectives, or verbs from nouns; above all, by exercising the scholars from the first in forming sentences of their own to illustrate every logical or grammatical distinction as soon as it has been explained."

Mr. Hernaman believes that "in many cases grammar is not as fully and intelligently taught as it might be even within the limits now prescribed," and Mr. Kynnersley declares that grammar "is very useful in rare instances as supplying some sort of framework for learning continental languages; but it is seldom well taught. In this respect I fear our standard is very low."

Mr. Brewer declares that analysis should be taught before parsing; but contrast his opinion with that of Mr. Warburton :—"As to grammar, my experience is that with a moderate amount of painstaking on the part of the teacher all children of average intelligence can be made sure of passing in the lower stages; but analysing, even of the very simplest kind, seems to present great difficulty to scholars, and indeed to teachers also in elementary schools. I very rarely am able to pass a child in the grammatical exercises of the fifth and sixth standards without some misgivings. An inverted sentence for instance is pretty sure to prove a stumbling-block to the former standard, and participial phrases are constantly taken for 'sentences' by the latter."

Of all the remarks on grammar, however, the most remarkable are those of Mr. J. Corrington Ley. He is greatly undecided, as will be seen from the following extract :—"Upon the value of grammar in elementary schools I offer no opinion, I confess that even now I have not entirely made up my mind as to whether I should rate it as the most or the least useful of the subjects comprised within this article—whether in fact a child is really thereby compelled to *think*, or whether things that are dark enough without are not somehow made darker by the introduction of superfluous formularities. Whatever may be the use of grammar as an instrument of education, there can be no doubt that, as a purely ancillary science, it should be made as simple as is compatible with the object for which it is taught. Your lordships decline, and no doubt for excellent reasons, to interfere at all in the matter of the choice of books for schools; but if this rule were ever to be in any degree relaxed, I should be glad to see some one book, or at least, one *system*, receive the imprimatur of your lordships' approbation. At present, the grammarians appear to disagree like metaphysicians. I have been in the habit of revising grammar papers of candidates for certificates of merit and for admission to training colleges, for some years, and I thought I had in this matter now at length 'swallowed all formulas.' I must confess, however, to having been somewhat taken aback whilst examining a country school not long ago, on being informed by the master, who came to the rescue of his first class, that there is *no future tense*. To one bred in the orthodox faith of the Eton Latin grammar, this was a severe shock, and I was tempted, I admit, to rehabilitate the future by invoking your lordships' authority; the imperative mood, however, has gone along with the future, and has itself been absorbed in the vast *aidem* of the infinitive."

Of geography there is little to say beyond the fact that some inspectors complain regarding the misuse of small text-books "adapted to the requirements of the Code," the infliction of rote work upon the pupils in the way of learning definitions, and the neglect of maps and globes in giving instruction to a class. Mr. Holmes has a long essay on the subject of geography which we commend to the attention of young teachers and students in training, who may have to write a theme as an exercise in school management. He believes that the subject is at once "most popular and the most profitable," and on that text he expiates. Mr. Ley, on the other hand, informs their lordships that he "must confess to some little scepticism as to the special value of this subject for the purposes of *elementary* education." Perhaps by this time he has read Mr. Holmes's essay on geography and has altered his mind on the matter, and possibly, also, he now regrets that he wrote the following :—"I suspect that, as a rule, the names of places and countries, seas and oceans, lakes and rivers, capes, promontories and islands however accurately learned, remain but names—airy nothings, but with no local habitation in the minds or imaginations of the children. I doubt if much enlargement of the 'mental horizon' is, in fact, obtained in this way."

Mr. Morgan Owen has some words to utter on the method of teaching geography from text-books alone. He says :—"I have found that young children have been obliged to get up by heart page after page of a text-book; but when I put a simple question to them they stared at me in blank astonishment, as though I had addressed them in an unknown tongue. Upon appealing to the master he might ejaculate, 'Oh, but they know the book, sir!' And upon giving them the first word, the poor little things would rattle away until they lost their breath through the rapidity of their utterance. Such treatment as this is a positive cruelty, and managers of schools would do well to see that it is not indulged in. As far as I am concerned, this performance is a profitless one, because I should be robbing the public purse in a most unrighteous manner if I recommended a grant for a subject, I will not remark so unintelligently taught, but so wilfully abused."

As a good specimen of the way in which geography may be sometimes taught, we quote the following from Mr. Markheim :—"At one of the Whitby schools the geographical teaching is a model of intelligence and ingenuity. The subject is the geography of Yorkshire, and a sand map of the county, with all the important physical features, has been carefully modelled on a terrace adjoining the schoolroom. The sand has been brought by the children from the beach, and has been moulded by them, with the assistance of their teachers, into mountains, hills, valleys, and rivers. The proportions are observed with wonderful accuracy; nothing could be neater or more finished in its way than the coast line, ornamented with diminutive lighthouses at the well-known points; the towns are represented by little square blocks of chalk of different sizes, according to their population and importance; the river basins have been carefully distinguished from one another; everything speaks to the eye. It is quite plain that the geography lesson has formed part of the recreation of the school, and the examination is eagerly looked forward to. The children leave the schoolroom and come out into the fresh open air. They cluster round their terrace map, and it is a pleasure to watch the keen interest, the delight with which they answer my questions. I feel that in their case one great object of mental education, viz., the development of a sense of pleasure in the acquisition of knowledge, has been successfully attained."

Contributions and Correspondence.

OBJECTIVE TEACHING.

BY MISS M. K. SMITH, TRACADIE, N. B.

Not long ago I read the heading of a prize essay, "How we grow." It was not my privilege to read more than the title, but that was sufficient to set me thinking of the numberless influences that promote the growth of a human being. Influences all more or less connected with one another, working upon the body, the mind, and the soul. The body increased in size and strength through the agencies of food, air, and exercise; the mind growing by means of impressions borne in upon it through the medium of the senses,—first, the receiving of the image, and the notion in connection therewith, the two forming the idea, and, through the relations of these, the formation of thoughts, and after these, the

power of reflection and the impulses of action; and according to the nature of these reflections and impulses, the growth of the soul is promoted. If impulses be low in their nature, then the soul becomes contracted, low, and sensual; or if they be broad and pure, and right, then the soul grows great and pure, and radiant with a beauty that illuminates the mind, and stamps its impress upon every lineament of the countenance, and makes itself felt in every action of the life, and gives to human nature something of the attribute of Divinity.

"Growth is the Law of all intelligence." Intelligence, or the power to see, comprehend, and reason, is the gift of God, to be developed in us, and by us, till it raises us to a power that shall be God-like in its grandeur; or neglected, misused, or abused till we sink to a level with the brute creation, mere creatures of instinct.

The laws of growth have been conferred by God upon all His creatures, and through the right observance of these laws, by His grace we grow physically, morally and mentally.

In the little seed, there is the germ containing, in minute form, the tree with all its possibilities of trunk, branches, leaves, flowers, and fruit, which, by the favouring conditions of light, warmth, moisture, and fertilizing soil, may be brought to the highest perfection.

In the little child lie concealed all the faculties and abilities calculated to produce the perfect man in the image of God, and the attainment of the end desired depends in a great measure upon the form of development to which t .e little creature is subjected, —upon the proper observance of Natural Law. I wonder whether we teachers think sufficient of the wonderful work we undertake when we take charge of human beings, who will one day rise as witnesses, whose testimonies for or against us shall affect our interests to all eternity. Whether we ever reflect that the training of human minds, if carelessly done, may be, as Carlyle has said, as destructive as blowing human bodies to pieces with gunpowder. Whether we comprehend that the work we have taken in hand is as sacred, I had almost said more sacred, than that of the minister of Christ, whose work it is to try to save souls, which, it may be, we, through our bungling, have helped to place in jeopardy.

If we do realize this awful responsibility, shall we not before entering upon our offices pause to consider whether we are God-appointed teachers, for working with immortal minds, whose success or failure shall be traced back to our skill, or to our incapability; or whether we have appointed ourselves mere hod-carriers in the profession, content if we can but earn money sufficient to keep us in food and clothing, content to walk forever amid difficulties; ourselves blind, and leading the helpless and blind into pits of destruction, which on every hand have been digged by vice and ignorance, and continually yawn for the unwary.

I would that we could realize more thoroughly than we do, that the places we fill are glorious positions, more than worthy of the consecration of our best energies and powers, and that we might every one of us be inspired with a burning ambition to be ever foremost in the ranks of the called, the chosen, and the faithful.

The gardener who is anxious for the perfect development of the seed, is careful to know everything about the conditions necessary to secure proper growth, which must be natural, progressive, and symmetrical.

Now, we who work among human minds ought surely not to do less than inform ourselves of the nature of the work we undertake, in order that we may pursue the methods that may be most likely to insure our success.

In regard to mental development, I found a beautiful thing the other day, from the pen or the tongue, I hardly know which, of James Hogg. Speaking of the necessity for easy natural development in the place of the hurried, forcing system, which, I am sorry to say, teachers are sometimes obliged to pursue, he says: "Silent and spontaneous growth; like a bit blade o' grass, or a bi. flower, or a bit buddie, no the size o' my nail, unfauldin' itsel' to the dew and sunshine into a leaf as braid's my hand,—or a bit birdie, the beginnin' ae week a blin' ba' o' puddock hair, at the beginnin' o' the neist, a mottled and spangled archin, hotchin' restlessly in the neist, and ere three weeks are ower, glintin' wi' short uncertain, up an' down flichts in an' out amang the pear blossoms o' a glorious orchard."

Granting that this silent and spontaneous growth is natural and necessary for the full fruition of the germ, whether it be in the seed that shall later become a tree, or in the human mind that under proper culture shall grow to be a power that shall be felt throughout the universe, we have to consider the means to be employed for the promotion of this silent and spontaneous development, and the methods for nurturing the moral, intellectual, and executive powers which God has placed in our keeping.

Pestalozzi says that all human growth springs from inborn capabilities; and that the promotion of this growth and power may be secured by means of the elements of knowledge which we bring in contact with the young minds, in a way that shall bring into systematic exercise the observing faculties of pupils, with a view to the cultivation of the senses; to the training of the perceptive faculties, to storing the mind with clear ideas, and last, though by no means least, with a view to the cultivation of the power over oral language by leading them to express in appropriate words the ideas thus formed.

In this work we have two things to consider: the nature of the child, which is akin to our own nature, and subject to laws common to the human family; and secondly, the individual nature which separates the pupil from every other. And just here I may remark, that it is in the ignoring or carelessly regarding this individuality that we are in the greatest danger of bungling, and of overruling in our ignorance the process that Nature is carrying on in the human mind. We should look to it that our interference does not tend to the misery, the weakening, or even to the total wrecking of the human life, for whose happiness, virtue, and power the great Mother is slowly and silently working. Our greatest care should be that the process of mental development be based upon natural laws. We know that the all-important rule laid down by Educators is: "Cultivate the faculties in their natural order," and here we may consider the signification of this word *faculty*. Pestalozzi has applied it to every manifestation of the human mind, no matter in what direction, or for what purpose.

In the little child, the first sensation appears to be feeling. It can distinguish between heat and cold, not as such perhaps, but as capable of affording pleasurable sensations, or the reverse.

Next appears to come the will-power, or as much of it as is in accordance with the instinct of self-preservation. This seems to be manifested in the vigorous resistance he makes with his only available weapon, the voice, against the wrongs which impose upon him physical pain. If his nerves are shocked by a harsh sound, or if his flesh be scratched by an inadvertent pin, he inflates his lungs, and raising a cry that strikes terror and agony to the hearts of listeners, he, in the most convincing manner, informs you that he has no intention of submitting to the inflicted suffering, and by the pugilistic attitude of his two tiny hands, he warns you of the sincerity of his intentions, had he only power adequate to his will.

Then closely following the will-power comes the desire to *know*, which appears to be an exercise of the will—some may say, of the mind, or intellect.

Now, before there can be a desire to know, there must be some *thing* or *object* to excite that desire. This some thing or object must come before the little mind through the medium of the outward senses: first through the eye. Almost the first thing that will attract a little child is the mother's face; principally because it is, during his waking hours, brought before his observation more frequently than any other object. He is never tired gazing upon it. It may be that with this observation, there is on the part of the child a sort of inner consciousness of the great love of the mother-heart. That a knowledge of her intense desire for his well-being appears to be the first impression conveyed in upon his little mind; and in accordance with the instinct of human selfishness, he is drawn to whatever conduces to his physical comfort. He is a philosopher indeed whose mental state is not materially affected by his physical condition.

As the little one grows older, other objects attract his attention. He sees an apple or a ball, and manifests a desire to test it by touch, as well as by sight. By touch he will know whether it is too hot, or too cold, to be comfortable.

Wishing still further to extend his knowledge, he submits the article to the sense of taste, and can very soon distinguish between pleasant and unpleasant in that respect.

Then very soon sounds will affect his ear, and sensations agreeable or the reverse, be conveyed to his mind, causing either his emphatic assurance in a series of screams, that he will have none of it, or manifesting by a laugh that it is his august pleasure to be amused with a repetition of the same.

The faculty which takes cognizance of the knowledge brought into the mind in this way from without, through the sense of sight, hearing, taste, touch and smell, is called perception, and this is called the presentative period, in which the outward perceptions combine to form the observing faculties of the mind.

Next comes the period of representation, when the sensations first imparted can without the aid of the objects first employed be reproduced. This appears to be the first active exercise of memory, and very closely allied to this comes the faculty by means of which the thoughts occasioned by ideas carried into the mind, through the senses, can be rearranged and new products formed, which may, through careful and judicious management, be infinitely extended. This power appears to combine the two faculties of reflection and imagination, while the power which guides them to proper results is called reason.

Thus we have perception, reflection, memory, imagination, and reason, to which the attention of the teacher must be directed in his endeavors to "cultivate the faculties in their natural order," and his efforts must be directed to the training and developing of those powers, instead of filling the mind with abstract truths which makes no impression on the intellect. His instruction, to be educative, must follow the natural laws of intellectual development, which begin in the exercise of the senses, and for this reason, for some time after children enter school, the presentative period must be continued by means of objects placed before the child, and subjected to sight, touch, taste, smell, etc.

Webster defines an object as that which occupies the mind in the act of knowing. From the root *ob* against, and *jacere* to throw, we gather the idea of something thrown or placed against the attention in a way that makes an impression upon the mind or intellect. It may be a material object, such as a ball, book, or stone, in which case it is presented to the mind through the medium of the senses of sight and touch. Anything brought to the mind through the other senses, or through all combined, is no less an object. Then there are what appear to be products of the mind, formed by a re-arrangement of conceived ideas. These may be called mental objects, or subjective objects, which are gained by means of inward perception or consciousness.

The method of imparting instruction by means of material objects has given rise to the term "Object Lessons," or "Object Teaching," but I think the expression too narrow to convey a correct impression of the proper system of mental development, while I believe that the too close adherence to the *object* has retarded the progress of development in our schools. Probably you have noticed with me that after a few lessons upon objects, the interest in them dies out, or they are dragged through in a way that shows both teacher and pupils to be exceedingly weary of the subject. I have tried to find out the cause of this failure in the attainment of the end proposed, and I think it lies in a want on the part of the teacher in comprehending the full importance of the system. An *object* lesson of half an hour every day, or perhaps of every week, is of little use, and will go but a very little way in developing the mental powers, if the other lessons of the school are carried on in parrot fashion, where definitions, rules, and a limited number of isolated facts are learned by heart, and recited in words of the meaning of which the child has not the remotest conception. I should like to do away with the term "Object Lesson," and in its stead use "Objective Teaching," in which every lesson and every word in it may be brought to the mind in such a way that it becomes a *mental object*. And in the consideration of objective teaching we may consider the place of objects.

From the objects, the child gains the habit of observing and noting peculiarities as regards size, shape, color, weight, etc.; and in the consideration of qualities the child learns to compare, and thus gains the very basis of education, which consists in the knowledge of resemblances and differences. Now, in order to make the ideas which the pupil gains through objects of use, he must learn to *use* these ideas. He must learn to group objects possessing the same peculiarities into classes, and to understand the relation of the individual to the general.

It is argued that the use of objects excites the interest of the pupil. This is true to an extent. If the ideas gained are not made use of, the interest dies out, and he will look upon objects with as much apathy as he will listen to general rules of which he does not understand the first principles. In order to retain the awakened interest, he must be taught to think. He must be led to discover general rules underlying individual cases. While the perceptive faculty is being developed, attention should be given to the representative or reproductive period, and to the creative power, and, during the development of these faculties, wherever possible, material objects may be profitably used to illustrate an idea. The mind must not be allowed to rest content with perception alone, but must be induced to new activities in the creation of new forms and products out of the elements furnished by materials. Perception consists in the consciousness of objects external to the mind, and conception consists in the taking from those objects, into the mind, pictures which may, upon occasion, be reproduced by means of the memory; and just here comes the necessity for language, that the child may have some sign which he can associate with the mental picture. And without this power of association, the development of perception and conception are almost utterly useless. The miser who hoards his gold and denies himself every comfort, is a poorer man and a less useful citizen than the laborer who earns his dollar during the day and spends it at night. The man whose mind is filled with thoughts which he has no power to give to the world—and there are many such—is less useful than the one who has a single idea with appropriate words in which to express it. The necessity is to gain ideas by means of objects, and then to gain words in which to ex-

press those ideas. The words must be as simple as possible, and such as, in their origin and arrangement, are full of signification. I think that in the object lessons which are generally dispensed in our schools, there is a tendency to encumber the sentences with stiff and formal terms; and the lesson is so full of stiff, formal sentences, that the little ones instinctively are led to consider an object lesson a very grave affair. 'Tis true, the idea may be developed, and, in proper form, the term given, but it often happens that the term itself is the most formidable object in the whole lesson, and the little ones use it as they would handle a large nut with a shell so hard that they could not get at the kernel inside. In every object lesson, and, indeed, in every lesson, *teach the children to talk.* I do not intend to convey the impression that it is wise to make children chatterboxes; but our work of development is only half done if we do not enable them to express, in choice words and with nice arrangement, any thoughts to which the objects have given rise.

In this, it may be advisable at times to substitute, in the place of material objects, mental objects which have been abstracted from qualities of materials. It is suprising to see how quickly children will learn to make mental pictures which they will be only too glad to tell to you in their own simple language; and if these are lacking in definiteness and order, it is by the power over words that the pictures are brightened, vivified, harmonized and symmetrized. It may be that this instruction does not come under the head of object lessons, but it certainly comes under the head of objective teaching; and I think any teacher who varies his stiff little lessons upon objects, with *matter* laid down on the right hand and *method* on the left, with language lessons induced by mental pictures, will find the interest and pleasure of his scholars increased, while their development will certainly not be retarded. I shall not say, when you practise object lessons, do not use objects; but I think I may say, when you teach objectively, do not consider an object of a particular size, shape, or color, possessing peculiar qualities, indispensable to your work. An examination of facts, or even of fancies that institute comparisons by which resemblances, differences and relations are observed, is no less objective than an examination of tangible materials.

Perhaps you will bear with me if I again refer to my hobby—the development of language. There are no object lessons more interesting, and at the same time more instructive, than lessons upon words.

Occupations, tastes, habits, indeed the whole history of a nation, may be found in their language, while the intelligent use of words aids the memory, lessens the labor of thinking, and promotes accuracy in reasoning. In a little book I read a few days ago I found this: "The greatest of sciences is that of language; the greatest of human arts is that of using words. No cunning hand of the artificer can contrive a work of mechanism that is for a moment to be compared with those wonderful masterpieces of ingenuity which may be wrought by him who can skilfully mould a beautiful thought that shall preserve, yet radiate, its beauty. A mosaic of words may be made more fair than of inlaid precious stones. The scholar who comes forth from his study a master of the English language, is a workman who has at his command hardly less than a hundred thousand finely-tempered instruments with which he may fashion the most cunning device. This is a trade which all should learn, for it is one that every individual is called to practise. The greatest support of virtue in a community is intelligence; intelligence is the outgrowth of knowledge, and the almoner of all knowledge is language. The possession, therefore, of the resources, and a command over the appliances of language is of the utmost importance to every individual.

"Words are current coins of the realm, and they who do not have them in their treasury, suffer a more pitiable poverty than others who have not a penny of baser specie in their pockets; and the multitude of those who have an unfailing supply, but of the wrong stamp, are possessed only of counterfeit cash that will not pass in circles of respectability."

I should not like to be numbered among those whom Pestalozzi has called worshippers of words; nor would I advocate fluency of speech without thought. We do not pay sufficient attention to the signification of the commonest words in our language, and by our neglect, the thoughts to which we give utterance lose half their beauty.

> "Language is a perpetual Orphic son
> Which rules with Daedal harmony a throng
> Of thoughts and forms which else senseless and shapeless were."

2. We have next to consider the use of books in objective teaching.

Under the old system, not so very many years ago, the schoolmaster, who *was* abroad, and who has gone so far that I am happy to say he is rapidly disappearing from the profession, was known as a man with stooping shoulders, a corrugated brow, a rod in his hand, and a book in his pocket. This book was on occasion brought forth, and its contents drilled *into* the brains of the pupils, in tones of thunder, to the accompaniments of tears, groans, sighs, sobs, with sundry other manifestations of supreme disgust for, and dissatisfaction with, that teacher, that rod, and that book. In those days the book was about the only article that was considered of much use, if we except the trifling accessories of the master, and the rod, which, according to the strength of muscle possessed by him, more or less strikingly emphasized the principles contained therein. Take away the book, and the teacher was as powerless as Sampson shorn.

Not only was *he* the slave of the book, but the book was the tyrant master of the little world over which he swayed the birch. All day long was the smallest child doomed to sit upon the high benches, without backs, with feet and legs dangling in mid-air, with a book (which did not even possess the merit of being small) held over the little face, shutting out all earthly things, save the great words that conveyed no meaning to the wondering little mind, and which assumed the queerest shapes to the fanciful little gazer.

If occasionally an inquisitive little being was prompted to take a limited view of life round the sides or over the top of the book, no sooner had the curious eyes fixed themselves upon some object that was a perfect feast to the mind, than down came the rod upon the helpless fingers; and the aching and stinging, together with smothered sobs and piteous face, were all buried in the book. That the book was heavy, or that the child was tired, never entered into the consideration of the teacher. His business was to see that the child went *through the book.*

It sometimes happened that a child became interested in the book, and had a real desire to know what connection the words had with himself or any other object in life (this book was chiefly made up of isolated words, ranging from one to an incredible number of syllables), and would summon courage sufficient to consult the master as to what a word meant, when he was made to realize the rashness and absurdity of his questioning by the teacher, in a tone of severe reproach and rebuke, answering: "Tut! What do you want to know that for? Go to your seat and study your lesson!" And to his seat the daring explorer into word-mysteries returned with a crestfallen attitude, his humiliation mingled with a vague thankfulness that he had not been totally annihilated.

At night, the unfortunate student was doomed to carry the book home, and there existence was rendered a state of misery by the heartrending struggles, in which all the family joined, to store

away in the weary little brain, a sufficiency of the book to secure the unfortunate fingers from contact with the birch on the morrow.

It is true the trials of the book were not without their alleviations, for when pencils could be procured, the margins of the leaves served for spaces whereon were to be seen marvellous attempts in designing, most of them bearing a rather curious resemblance to the teacher in his worst aspect, while behind those ample covers, many a grimace, expressive of great disgust with the whole system, was perpetrated; and to the dog's-eared leaves, many a discontented murmur was confined. As Objective Teaching has come in, the book has, to a certain extent, gone out, though I am sorry to say that even yet the majority of children in the common schools, and I believe I may say the students in the higher departments, are weighed down with burdens too grievous to be borne, in consequence of a blind faith in the contents of books. We see girls and boys, day after day, carrying home loads of books that, I believe, go far towards enfeebling the intellect and creating such a dislike for research, that, as soon as the victims escape from the school-rooms, they resist every inducement to open a book that looks as if it might contain a geographical fact or a historical date. It is true that some tremendous feats are on record in connection with the study of books. I know one lady who studied and committed to memory a large Dictionary—Webster's, I think; another could recite the whole of Mangnall's Questions; while such books as "The Reason Why," and many others, were taken, in unlimited quantities, into the memory. It may be that teachers and pupils worked as well as they knew, but it was, I think, terrible cruelty to the student at least.

There can be nothing more dreary than to see children, after a fatiguing day in school, working all evening over lessons that will not be committed to memory, going to bed with a sense of unfinished tasks upon their minds, some of them putting the hardest books under their pillows, having somewhere imbibed the superstition that the contents will by this means enter into their brain, by becoming blended with their dreams. Then to see them waked in the morning by an anxious mother with, "Come Mary, you know you have your lessons to prepare," and then the sullen, listless way in which those lessons are conned, and the unwillingness with which books are gathered, and the way taken to school; and then the envy and hatred that are engendered in the human heart, as some pupil, gifted after the manner of a parrot, gets up and glibly rattles off the very dates, events and definitions, that would not be induced to stay with poor Mary; and to hear the *parrot* pupil called "clever and promising," while the other gets admonitions to "beware of bringing a father's or a mother's gray hairs in sorrow to the grave;" or to "take care of the road to ruin," with many other warnings, and all because she could not remember a set form of words, that conveyed no meaning to her understanding.

I do wish something could be done to do away with so many home lessons, particularly among young children. I know that many teachers urge in excuse that the parents will not be satisfied as to the progress of their children, unless they see them toiling over home tasks; but we are glad to know that the day for pandering to the prejudices of a few people who do not understand the principles of our work has gone by, and, under our grand Free School system, teachers are so upheld and supported by their trustees, and, if not by them, by the Board of Education, that they need not fear to put in practice any right principle.

Besides the drudgery of rote-work, I believe that memorized lessons, especially in the early stages of development, materially hinder progress.

I have no doubt that many here can remember the long and weary journey through the multiplication table; a journey that was truly a way of sorrows, every step of which was made with suffering of no light nature.

Now, by a few object lessons upon the ball-frame, we lead pupils to discover the Mystery of Mysteries, and in a week they are able to construct the tables, equal in every respect to the wonderful arrangement that formerly demanded months of study to master, and years of application to understand. The first lessons upon any subject must be presented through the senses. "Children will do better in examining things than in reading about them."

I am inclined, however, to call in question rather the *abuse* than the *use* of books; for that they have important use there can be no doubt.

As references, or as supplying facts that are not easily accessible to investigation, they are valuable. Text-books, well-arranged, aid the teacher; enabling him to save time by supplying statements or by supplementing experience.

After the elements of any branch of study have been learned, books upon the subject may, with profit, be consulted, provided the pupils are capable of an intelligent appreciation of the information they gather.

When used aright, books are indeed wondrous in their power for good, but when blindly used, they are, to the human mind, instruments of evil, enfeebling the Memory, hindering Observation, Thought, Imagination, Judgment and Reason, and, indeed, every mental faculty, while implanting a false persuasion of knowledge without the reality. Plato has said, "The written word is but a mere phantom or ghost of the spoken word; which latter is the only legitimate offspring of the teacher, springing fresh and living out of his mind, and engraving itself profoundly upon the mind of the hearer."

In Objective Teaching, books are not tyrants, but, subjected to intelligent criticism, reason and judgment, they become valuable servitors to both teacher and students.

3. The Place of the Teacher in Objective Teaching.

To give an idea of the *Place* of the Teacher under the system that was *not* Objective, but Subjective, I quote from Walter Scott: "But there is one individual who partakes of the relief afforded by the moment of dismission, whose feelings are not so obvious to the eye of the spectator, or so apt to receive his sympathy. I mean the teacher himself, who, stunned with the hum and suffocated by the closeness of his schoolroom, has spent the whole day—himself against a host—in controlling petulance, exciting indifference to action, striving to enlighten stupidity, and laboring to soften obstinacy; and whose very powers of intellect have been confounded by hearing the same dull lessons repeated a hundred times by rote, and only varied by the various blunders of the reciters. Even the flowers of classic genius, with which his solitary fancy is most gratified, have been rendered degraded in his imagination by their connection with tears, with errors, and with punishments; so that the Eclogues of Virgil and the Odes of Horace are each inseparably allied in association with the sullen figure and monotonous recitation of some blubbering school-boy. If to these mental distresses are added a delicate frame of body, and a mind ambitious of some higher distinction than that of being the tyrant of childhood, the reader may have some slight conception of the relief a solitary walk, in the cool of a fine summer evening, affords to the head which has ached, and the nerves which have been shattered, for so many hours, in plying the irksome task of public instruction." That is an ugly picture. Time was when it contained more truth than it does to-day, though even yet there are touches that arouse our sympathy."

I wish, however, that Scott had, before he died, secured a broader view of this glorious work in which we are engaged; a work surpassing far that of the sculptor of marble, the cunning artificer in

brass, the skilful painter upon canvas, or the architect of magnificent temples; for all that *they* do must yield to time. The statue will perish, the inscriptions time will efface, the brightest colors will fade, and the grandest structures will crumble to dust; while in developing in human minds right principles of action, in imbuing them with the fear of God and the love of our fellow-men, "*We* are engraving, upon immortal tablets, records that shall brighten to all eternity."

The teacher who can only attain the distinction of being the tyrant of childhood, had better abandon his elevated position as quickly as possible, and seek for happiness in some more retired walk in life, where the peculiar qualities of his nature may develop without injury to his fellow-creatures. But what man or woman can conceive an ambition higher than that of controlling human minds, of generating ideas and fostering their growth till the results shall be a harvest of intellect that shall, in the ages to come, be a mighty power that shall advance and elevate humanity, and redound to the glory of God?

The position of the schoolmaster, as well as his profession, has, in every country, received at least sufficient contempt to keep him in a proper state of humility.

Josh Billings speaks of him "as a man going from house to house, taking his codfish balls reverently, and submitting patiently to any indignities that may occur to an ignorant people;" while Carlyle mentions one as "a down-trodden, broken-hearted, under-foot martyr, as others of that guild are." But we are glad to know that the time for all this has passed, and it now depends upon the teacher himself to enforce respect for his position and his profession. "Only fit for a teacher," is an expression that has been used, implying "fit for nothing under the sun."

I wonder how many have ever thought of the full significance of the word Teacher; and I wonder if *ever* there was a human being *fit* for a teacher. Since the lessons by the Sea of Galilee; since the Sermon on the Mount, I wonder how much real teaching has been done upon this earth of ours? The dross of Ignorance, of Neglect, and of Unbelief have mingled with the few sparkling grains of Truth that have been scattered abroad, until the fine gold has become so dim that we cannot wonder at its being mistaken for base metal.

That there have been grounds for the stigma which long ago attached to the profession, we are obliged to admit. But it is our privilege to see that there shall be, in the future, no grounds for a continuance of the same, while we shall, if possible, do utterly away with the existing disfavor.

In order to attain this end, we must spare no pains to fit ourselves for our places, and we must discharge, faithfully and well, the duties of our position; never for a moment losing sight of the responsibilities to which we have been called. I know full well the numberless hindrances that render the Teacher's path a way of difficulties, and I think have experienced a full share of the vexing cares that only a Teacher *can* know; yet I do believe that, instead of being obstacles to progress, these very annoyances may be transmuted into aids that shall prove of essential service in our advancement.

In Objective Teaching, the teacher's place is not behind the book, but between the child and the book. The master who could stand the same dull lesson repeated a hundred times by rote, must have had wondrous powers of endurance, such as are not known in these days. I think the aching head and all the other evils so touchingly described, were the results of his own unfitness for the position he held. The Teacher must so develop the judgment and reasoning power that his students may be able to attach a true value to the principles laid down in books. He must lead the child to observe, and to reflect upon what he observes; and, instead of giving him what Professor Blackie calls the "mere echo of knowledge," he must foster the growth of true knowledge which has its root in the thinking soul; and as he develops the mental faculties, he must train the child to such exercise of those faculties as shall strengthen and promote their growth.

Instead of displaying before his pupils the remains of learning, much as one might exhibit the relics of dead saints, he must, by means of learning, enable the young mind to work—*miracles*; to originate; to produce new forms that shall equal, and if possible surpass, any previous production. It is thus that the growth of an individual or a nation is fostered, and it is in large measure upon the Teacher that the future prosperity of individuals and of nations depends. He must be an *Educator* who has the highest interests of his profession so deeply at heart that no trouble is too great, provided he can the better fit himself for his work

In this, as in everything else, the Teacher must practise his own precepts. If he will have children to originate, he must show himself something of a creator. If he will have them act, he must show himself ready in action. If he will have them think and feel earnestly, he must show himself capable of earnest thought and feeling.

He must have an active mind, brilliant with living thoughts and glowing with an ardent zeal for the advancement and the elevation of humanity. He must look upon his work as worthy the cultivation of the highest possibilities of his nature, and of the exercise of his finest capabilities. He must throw private preferences and prejudices to the winds, and work earnestly; his highest ambition being the promotion of intelligence among his fellow-creatures.

4. Lastly we have to consider the end attained by a system of Objective Teaching.

After a course of cultivation in accordance with certain conditions established by nature, the gardener finds the little seed which he planted in the ground become a great tree, fulfilling its promise of stately trunk, symmetrical branches, rich and abundant foliage, fragrant blossoms and luscious fruit.

The mind of the child is the field in which the seed of future promise lies concealed, and if the Educator has, in accordance with fixed and immutable laws, prepared for the development and nutrition of the plant, wondrous will be the results. The eyes that have been trained to see shall, in time to come, behold all beauty and wisdom in the great Book of Nature. To their searching gaze, the wonders of the stars of heaven shall be revealed, while the mysteries of the mighty deeps shall be unfolded to their view. The ear that has been taught to listen shall be able to divide the sounds of nature and of the human voice into harmonies that shall minister delight to the soul. The hand that has been trained to touch and to fashion, shall yet shape wonderful things; shall build mighty structures; shall guide the pencil in producing marvels of genius in pictures; shall shape the marble to the most graceful proportions; shall pen wisdom that shall be for the guidance of coming ages; shall draw forth from instruments which their own skill has fashioned, sounds rivalling in sweetness the songs of angels; while the tongues that have been taught to speak, shall give forth from the storehouse of the soul thoughts that shall draw all men to listen, breathless with wonder and reverence. By them the destinies of empires shall be changed; the words of eternal life, carrying conviction in upon every mind, shall be borne to the ends of the earth. They shall utter songs of marvellous sweetness and power that shall echo down the ages, filling human minds with all good and grand impulses; and, in the humble quiet of private life, they shall convey delight to hearts that beat with

happy emotions at the loved familiar tones; or they shall convey to the Throne of Grace the praise and thanksgiving of humble, worshipping souls.

Pestalozzi has symbolized the undeveloped human mind by a "seed planted near fertilizing waters." Shall we image the fully-developed human mind by a perfect tree, watered by the River of Life, growing by the Throne of God—the Immortal Amaranth hung with the blossoms and fruitage of a noble character?

PHYSICAL EDUCATION AND ITS PRACTICAL INTRODUCTION INTO SCHOOLS.

A PAPER READ BEFORE THE TEACHERS' ASSOCIATION OF ENGLAND, BY DR. ROTH, JAN. 15, 1880.

As the subject on which I have to address you is a very large one, and the time allotted to me very short, I can only give you a bird's-eye view of this important and much-neglected branch of education.

People having but a superficial knowledge of a thorough education still believe that they can separate mind from body, and that they can develop our physical faculties without our intellectual ones; they forget that the mind and soul have a physical basis, and that there is but one education.

No man can have his mind well trained without a good physique; no intellectual education can take place without a previous physical education of the senses, and moral training can only follow the intellectual, based on the physical.

Education is the harmonious development of all bodily, mental, and moral faculties, for the purpose of contributing to our own and our fellow-creatures' happiness, and of enabling the next generation still more to improve their successors. Education should be progressive; the future generation should be more improved, and brought nearer to the possible perfection of our natures. The development of our bodily faculties on scientific principles through the intellect is called scientific physical education, and this is the science which considers man an inseparable unity, and does not admit partial development of the body or of its single parts, without a simultaneous harmonious development of the mind.

In order to develop our physical faculties to the highest standard, the body is to be placed in the most favorable circumstances affecting its growth and development; all the influences which in any way retard or interfere with its natural development must be removed—the science which teaches us what is useful and injurious to the body is called hygiene, or science of health. We call school hygiene that part of this science which relates to the growing human body during the time of school, college, or university education; in this case all arrangements connected with the school-building—the school-room, its ventilation, lighting, and warming, the construction of windows, doors, benches, forms, seats, and all the necessary accessories—must be in accordance with sanitary rules. Another part of school hygiene concerns the teacher, who, before his admission as public teacher, should be carefully examined whether his intellect and physique have a predisposition to any disease, or to break down under the burden of his future heavy duties. One of the most important qualities of a teacher is to be healthy, strong, and to know how to preserve his own health—otherwise, he is unable to preserve the health of his pupils. Every teacher should, therefore, learn in the training college the elements of personal and school hygiene; he should know the injurious effects of bad air, light, food and drink, tight clothing, bad boots, the neglect of cleanliness, bad positions during the various occupations of the pupils, and of the danger of infectious diseases being brought to and communicated in schools—in fact, the teacher must know how to avoid whatever interferes with his own and his pupils' health.

School hygiene refers also to the pupils, who should be daily examined as to the cleanliness and tidiness of the head, face, hands, body, dress, and shoes, and further as to any symptom of ringworm, inflammation of the eyes, sore throat, cough, fever, &c. The ignorance of hygiene prevails not only among the poor and working classes, but also in the middle and higher classes. A short time ago I had a letter from an intelligent governess knowing the value of health, in which she mentions how all her endeavors for teaching her pupils the bad effects of tight lacing, and intemperance in eating and drinking, &c., are all neutralized by the parents' ignorance of hygiene, which depends upon careful attention to apparently small things, and which should be taught in schools. As long as medical inspectors are not appointed, as in Paris, Boston, and other places, it is still more important for the teacher to take the place of the inspector.

While preparing my notes for this address I had a letter from Dr. Janssen, the Chief Inspector of the Sanitary Service in the city of Brussels, in which he gives an account of the medical inspection of all infant, primary, secondary and higher schools, which are visited once a week. He speaks of the popular courses on health given to the boys' and girls' schools by the medical inspectors, and of the preventive treatment of very weak children, and of such as are predisposed to constitutional diseases, so frequent in large towns. The doctor also mentions that the hygiene and care of the pupils' teeth is not neglected; a special dentist is employed for this purpose. At the beginning of the school year every pupil is medically examined, and if weak, or constitutionally ill, placed under treatment. At the end of the year the result of the treatment is registered in the presence of the teacher and a second medical man. I am sorry not to have time to enter into the details of the Brussels sanitary school-work due to Dr. Janssen's energy.

In London, the richest city in the world, nobody thinks of the necessity of a medical inspector of schools; but instead of preventing children from being ill, we are constantly begging and collecting money for children's hospitals and orthopædic institutions. Hygiene is an essential and indispensable part of scientific physical education. The school must be made use of, for imparting the knowledge of popular and practical hygiene. By choosing the human body and its single parts, as well as the functions of the body, as object-lessons, illustrated by suitable diagrams, an intelligent teacher will make the subject of health very interesting, even to children. With few exceptions, the practical hygienic part of physical education has made very little progress, and everywhere, even on the continent, much is still to be desired in this respect.

To prove how much the hygienic ignorance of the public costs, just look at the columns of advertisements of patent medicines, pills, ointments, lentil meal (under the name of "Revalenta Arabica"), etc., which cure and prevent all diseases; the ignorant public pays hundreds of thousands for the advertisements, and still more for the advertised drugs. There is no doubt that the daily and periodical press, with the influential power it possesses, contributes through these advertisements to the preservation of prejudice and ignorance among all classes, and especially among those unacquainted with the practical knowledge of preserving health. As long as the leading journals consent to admit the advertisements of quack and patent medicines, magnetic and other contrivances, and of liver or stomach pads, the wonderful curative powers of which are certified so many thousand times in the daily and weekly papers, there is only one remedy for counteracting the injurious and expensive effects of such advertisements—namely, to teach children in school what is good and what is bad for their body and health. I have no time to enter

fully into this part of physical education, and wish to mention that there is in the Kensington Museum a collection of means for scientific physical education, which I have exhibited in the International Exhibition of 1862. The task of hygiene is to give us the best raw material, otherwise we cannot manufacture a good article.

Dr. Roth explained a few diagrams of foot deformities, of bad positions ; and a model of a hygienic chair and desk.

The second part required for the purpose of developing harmoniously the physical faculties consists in the practical use of a scientific system of exercises, based on anatomical and physiological principles, and adapted to the various ages.

Greek Gymnastics.—The science and art of bodily exercises was developed to its highest standard by the Greeks under the name of gymnastics. According to Lucian, Solon said to the Scythian, Anacharsis, "To us Greeks it is not enough to have a man as nature created him, but we train him by gymnastics that we may make that much better which nature has done well, and improve what is inferior."

Gymnastics was interwoven with Greek national life; it formed an essential and very important branch of the education of both sexes ; health and beauty, which were considered essential accomplishments, were due to a great extent to scientific gymnastics. The highest developments of the beautiful human form, which served the Greek painters and sculptors as models for those wonderful pieces of art which still engross our admiration as well as the sense of the beautiful (the so-called æsthetic sense, which spread all over Greece), were owing to the same science. When agonistics (the art of wrestling, fighting, struggling, &c.), and, later, athletics (by which only brute force was developed) had a more prominent place in Greece, gymnastics went out of use and decayed.

Unsuitable Gymnastics.—That the Greeks spoke with much contempt of gymnastics when it began to degenerate, with regard to good manners, is shown by the following :—Kleisthenes, who lived about 500 B.C., may be looked upon as a type of the real Greek spirit prevailing at that time, which turned with antipathy from whatsoever was unæsthetic, gymnastics included ; his daughter, Agarista, was courted by Hippocleides, a rich young Greek, who, by his engaging manners, had already obtained the father's good will, which he entirely lost by a single action. During courtship, and at other domestic festivals, it was the custom to amuse the visitors by gymnastic exercises. Hippocleides, well acquainted with all bodily exercise, performed miraculous feats, believing thereby to rise still more in the estimation of his future father-in-law, who with much difficulty restrained himself from expressing his disapprobation of the frivolous attitudes and exercises; but when the young man even stood on his head, and in this position commenced to gesticulate with his legs as if they were arms, Kleisthenes could no longer stand it, and called out with indignation, "O ! son of Tisanodos, you have danced away your marriage," and the daughter was refused to her lover.

What a contrast between the indignation of Kleisthenes and the loud calls of applause which are bestowed on the same unæsthetic and similar feats performed in our theatres and so-called gymnasiums ! What would the well-educated old Greek say were he to see in our gymnastic institutions how the young men, hanging with their knees on a horizontal bar, swing round and round like a mill-wheel ?

Since the fall of Greece no scientific system of gymnastics has been known till the eminent Swede Ling, who ranks amongst his compatriots as high as Linnaeus and Berzelius, invented in 1805 what is called rational gymnastics, a system based on anatomy and physiology. Ling, an eminent poet and patriot, wished to increase Sweden's power of resistance against further encroachments of Russia, which had already taken too many provinces from Sweden ; he believed the best to be done for this patriotic purpose would be the scientific physical development of every Swede.

Rational gymnastics is divided into four parts—the Educational or Pedagogical, the Military, the Æsthetical, and Medical.

Æsthetic Gymnastics.—Educational, rational gymnastics is the basis of this science, which teaches us to express by the body, through different positions and movements, a thought or a feeling. It is especially in this part of gymnastics that oneness of body and soul is aimed at. Each single movement following an idea conceived by the mind is a thought expressed by the body. When it is possible to express an idea by the body, the whole organism becomes an organ of the thought ; consequently, this organ must in every part express this thought, otherwise the expression is not faithful or not clear. A person desirous of expressing tenderness while clenching his fist, expresses by his body something quite different from the idea intended. In æsthetic gymnastics it is the soul which acts on the body, while in educational gymnastics it is the body which acts on the soul. Thus, æsthetic gymnastics becomes a means of developing and perfecting sculpture, painting and the other fine arts. As in declamation and song, so in each gesture there is a definite rhythm ; and the artist who wishes to represent a certain idea must choose a certain moment of action if he wishes to convey his idea through the creation of his art.

All our passions are divided into two classes, those of sympathy and antipathy, or affection and aversion. The first are expressed by oval, the second by angular lines ; even the various degrees of intensity of the same idea are expressed by various positions and movements.

Military Gymnastics is also based on the educational branch, and is the science which teaches how to subdue, by the assistance of external means (as weapons), or by our own bodily force, another will external to our own. Fencing, sword and lance exercises, bayonet fencing and wrestling are, besides the educational branch, the principal exercises of military gymnastics.

Medical Gymnastics is the science which teaches "to allay or cure pains and disorders by certain positions and movements, done either by ourselves alone, or with the assistance of others, acting upon us, whereby the harmony in the different parts of the body, which has previously been deranged, is restored." A number of patients who suffered from chronic complaints and deformities, owe to the genius of Ling relief and cure. Although medical gymnastics has always been used by the Chinese, and later by the ancients, the special movements and manifold manipulations invented by Ling were not known before. I believe it more suitable to say a few words on the various branches of Ling's rational gymnastics, before I enter more fully on the aims and final result of pedagogic gymnastics.

The aim and final results of pedogogic gymnastics is to develop man to such a degree of perfection as is shown by very good health, complete energy and harmony in all his powers and faculties, the ease of movement of the limbs, and by the symmetry of his bodily form. Having obtained such a development, the organism is ready and capable of obeying the commands of the will, and of serving the soul as an useful and enduring instrument. For the purpose of obtaining this result, it is not enough to find out by numerous combinations and variations of certain sets of exercises all that is possible to be done, but we must study and inquire into the laws according to which the exercises answer the object and the results we are aiming at. These laws are based on the exact knowledge of the nature of the human body ; therefore the knowledge of the bones and muscles forms an indispensable basis. As the muscles are influenced by the nerves, and as the various organs of the living body act and react on each other, physiology is necessarily an additional science required for the practice of rational gymnas-

tics. As physiology culminates in psychology—the science of the intimate connection and mutual influence of body and mind—a knowledge of this science is also desirable. In proportion with the greater development of the organs, man acquires greater liberty and independence in his moral will and actions, as well as greater energy and power of endurance. The teacher of physical education should be able to study the mind of his pupils and judge to what extent and how best to adapt certain gymnastic exercises to their various mental and bodily constitutions. He must be an educator, a pedagogue, and have the æsthetie sense well developed.

The whole bearing of a physically well-educated human being must appear free, noble, pleasing to the eye, and satisfy the æsthetic sense; the teacher must insist on bad, ugly movements being left off, while he should rouse the sense for beautiful forms of movement. I have already mentioned why the teacher must know the elements of hygiene; he will, therefore, know that all his pupils, even those of the same class, cannot be treated in one and the same way. A plethoric pupil, one disposed to giddiness, or one with a weak but not diseased chest, is not to be excluded from the exercise class—on the contrary, many of these and similar indispositions can be removed by suitable gymnastic instruction; it is on this account that all the students in the Royal Central Gymnastic Institution of Stockholm are instructed in the diagnosis of certain complaints and irregularities of form and gymnastic curative movements, to enable them to treat their future pupils according to their constitutions.

Having mentioned the qualifications and knowledge required by a teacher of scientific physicial education, you will easily understand that the drill-sergeant, calisthenic and gymnastic teacher, and dancing mistress, &c., to whom alone the physical education of our children and youth in the United Kingdom is at present confided, are decidedly not the right persons in the right places.

The reason why these people are resorted to is that even at present the majority of head masters of public and private schools, School Boards, committees of large training colleges, students and teachers, medical and military men, are all unacquainted with the present state of scientific physical education and rational gymnastics. The few who think of physical education separate mind from body, and believe that desk, school, and military drill, climbing ropes and ladders, swinging the body round and round a horizontal bar, and other exercises developing force, are sufficient. Rothstein, the author of the most philosophic and best exposition of Ling's system of gymnastics (published in 1848), says: "It is very singular that we should not confide the care and training of a valuable horse to a man who has not a knowledge of the animal's body and of the functions of the organs, while the man who is entrusted with the development of the human body is not expected to possess any knowledge whatever of such a science."

The unacquaintance of teachers with the subject I am advocating is not a libel, but a serious fact. I hope that the head master of a well-known public school in London, who intends establishing a gymnasium, to which he generously contributes a fourth of the expenses, will be careful that the instruction be more scientific than in the so-called military, model, and other gymnasiums, where are used all kinds of unæsthetic exercises, which only develop brute force, and which would not have been approved of by our old friend Kleisthenes.

As the present Vice-President of the Committee of Privy Council on Education has lately proved his interest in the better instruction in singing, which is merely a part of physical education, it is reasonably to be expected that he will take still more interest in improving the present bad and deficient state of physical education and hygiene, which, if not more important, is at any rate as important as singing; *a statement the truth of which cannot be denied by anybody.*

I suggest that—

1. These branches of education should be *compulsory.*

2. The teachers should be paid for the extra work in the same proportion as for reading, writing and arithmetic.

3. The pupil teachers, schoolmasters and mistresses, should be trained in training schools in the elements of sanitary knowledge and physical education, in which they should not only pass a theoretical examination, but prove their proficiency for teaching these branches practically.

4. Teachers who are already practically employed should have an opportunity, during a limited time (say, during the holidays), to go through a supplementary course of instruction, to enable them to teach their pupils at least the rudiments of the knowledge.

5. For some time *unattached* teachers of physical education should go to the various school districts, to give theoretical and practical instruction to such teachers as are unable to leave their schools even for a limited period.

6. In all schools a minimum of sanitary knowledge and physical education should form the standard according to which the teachers should be paid.

7. *Elementary* books on sanitary knowledge and physical education, approved by the Council of Education, to be used.

8. A National Central Institution for Physical Education and Hygiene should be established, on the model of that institution in Sweden which was established in 1813, and is probably the best—or of that in Berlin.

Only *certificated* schoolmasters and mistresses should be admitted, who should go through a special course of instruction in the elements of anatomy, physiology, hygiene (in their relation to physical education), and theory and practice of bodily exercises; after passing an examination they would obtain a certificate as special teachers of physical education and hygiene. Officers of the army and navy might be also admitted to these courses, as in Sweden and Prussia.

These special teachers of physical education could be employed as *unattached* teachers to give the supplementary course named (suggestions 4 and 5); while the military and naval officers could, when certified, begin similar courses in naval and military schools, in their regiments and ships.

9. From my personal experience of the few voluntary courses I have given to intelligent schoolmistresses, fifty lessons of one hour and a half, given by certified and *unattached* teachers, would be sufficient for the supplementary course in the *elements* of physical education and hygiene.

10. During the holidays, teachers from the country could be invited to come to the large towns and to attend these supplementary courses.

11. The expenses of these country teachers should be paid to those teachers who pass their examination.

12. After having passed their examination, the teachers should be obliged to make physical education an integral part of the course of instruction, for which they are to be paid in proportion to the time spent on it, or according to the results of examination in the various standards of physical education and hygiene, which, like the other subjects of instruction, will be required.

13. According to my humble opinion, the future schoolmistresses in all Training Colleges should also be practically instructed in the management of babies and infants; for which purpose a model nursery, for six to twelve orphan babies and infants, should be attached to each college, under the superintendence of an educated and well-trained nurse; every pupil teacher could thus learn how to feed, dress, wash and manage a baby in order to keep it well

and strong. The general ignorance of mothers in all classes of society, of nurses, of nursery governesses, regarding the first physical education of a baby and infant, is *the* cause of the infant mortality, to which no doubt *neglect* contributes very much.

14. The importance of swimming for all school children of both sexes is not yet sufficiently appreciated. All School Boards of large towns should take the matter of swimming baths in hand as a part of physical education. The ratepayers would soon find out that every penny well employed by a School Board saves twopence in poor and police rates, and in the expense for medical attendance and chemists' bills.

15. My last suggestion is the appointment of Medical Inspectors of Schools, to prevent the large class of school diseases, which are partly imported and spread by infection, partly caused by unsuitable school arrangements.

The practical exercises of pedagogic gymnastics do not develop special manual and bodily ease and skill required, later in life, for a special trade or profession, but deal with those faculties and powers which are necessary to every one, and which are required by everybody in the various circumstances of life ; thus, besides the general development of the body, walking, running, high and long jumping, climbing, hanging, and swimming are objects of special attention. Although the natural power enables a man to do the exercises just named, without any special school instruction, pedagogic gymnastics teaches how they are done with the greatest ease, safety, energy, and with a quick resolution at the right time ; and, further, how they are to be done for the ultimate aim of gymnastics.

It is obvious that no single one of these exercises should be practised at the expense of the others ; the aim is not to try to obtain the maximum to which exercise can be carried, but that the exercises in general should be reasonably limited ; unæsthetic, unnatural, artificial, and acrobatic exercises, are neither wanted nor permitted. The aim is not to do all possible exercises, but only those which can be done rationally. For educational purposes, simple gymnastics are the best. The pedagogical, practical, and æsthetical aim is to be considered in each exercise ; too many exercises, as well as too great a variety, are not required. One part of Ling's rational pedagogic gymnastics consist of exercises which are done without any external, mechanical, or gymnastic apparatus; they are, therefore, called free exercises. They appear more simple than they really are. Each gymnastic exercise is based on the special structure of the joint on which it acts ; has commencing, many intermediate, and final positions ; it is done in a definite period of time, and in a definite direction. Just as there are various standards of writing, reading, and arithmetic, so there are various standards of exercises to be chosen on pedagogic principles, and adapted to the various ages and stages of strength of the pupils.

The so-called simple free exercises can be combined in a manner similar to the letters of the alphabet ; and two, three or more simple free exercises can be chosen. One individual or many persons can perform the free exercise at the same time, which is done by words of command. If the physical faculties are developed to a certain extent, and if it is desired to make further progress, two or three persons form a group for the purpose of mutually assisting or resisting one another. The models and drawings I have here represent a few positions and movements of the free exercises. Having taken much interest in the improvement of the physique of the blind, I had an artist for several months living with me to model from life about thirty-six positions ; a copy of the original models I have given to the Kensington Museum, where they form part of a collection which I have named before. These models are bad imitations of the original bas-relief of which you have the drawings in your hand ; they serve for the instruction of the blind, deaf or dumb, and also for children in general. The Society for the Improvement of the Blind have been so kind as to lend me these models for the present occasion.

As there are probably some persons present who have never heard of free exercises, I intend showing you some models and drawings representing the elementary free exercises, which can be arranged under the heads of bending, stretching, turning, and circular movements. The movements of the head are analogous to those of the trunk, while those of the arms and hands are similar to those of the legs and feet. According to the commencing position of the body, which can be standing, sitting, kneeling, lying, the effects of the various exercises change ; for school purposes the standing position is usually chosen. This standing position varies according to the position in which the feet are placed. There are two fundamental positions of the feet, called "feet open" and "feet close," which can be varied according to the distance in which one foot is placed, either sideways, forward, or backwards. The length of the pupil's foot represents the distance, which can be single, double, or threefold, sometimes even fourfold. If the base on which the pupil stands is diminished, more attention and effort are required, because the exercise to be done is more difficult. If the same exercise is to be done on one leg only, it is necessarily still more difficult. If exercises of various parts of the body are combined and simultaneously executed, the difficulties increase according to the various combiuations. I have mentioned these few instances only for the purpose of showing that the teacher has in the free exercises all the means for gradually developing the physical faculties of his pupils. My advocacy of the free exercises is based on the many advantages which they offer in physical, mental, and moral respects. I shall only say a few words on the advantages of free exercises, but must refer you to my little pamphlet on the neglect of Physical Education and Hygiene by Parliament and the Education Department, where both the advantages as well as the consequences of neglect of physical education are more fully named. Many teachers know the improvement in discipline, obedience, and order, caused even by the unscientific ordinary drill.

In a paper on Physical and Mental Training (which Mr. Chadwick was kind enough to send me), he mentions "a committee of a large school considered physical training unnecessary, and the drill-master was dismissed." The immediate result was bodily irritability, and hence uncontrollable mental irritability on the part of the boys. There was tumult and bolstering in the dormitories, and all sorts of riot and disorder ensued. In less than a fortnight damage was done to the amount of £200, more than three years' salary of the drill-master. The chaplain exhorted and prayed, the master flogged, and flogged, and flogged, but without effect, as flogging did not touch the seat of depravity—irritation from the want of physical exercise. At last the chaplain and manager besought the restoration of the teacher and the physical exercises he directed. This was done. The demands of hygiene were satisfied ; there was quiet sleep in the dormitories, and so it has gone on. Now, wheresoever we hear of any disorder and rebellion in schools, wheresoever there has been extensive truancy, we may be sure that it is the system or the managers that are in the wrong.

The importance of these exercises for military training is well known to the Imperial German Government, the Emperor being the Commander-in-Chief of all German armies, and there is what they call "einh allerhöcster Befehl," or Cabinet order—which means that the Emperor himself has signed the order that all German recruits must pass through an obligatory course in these ex-

ercises, which are considered the best preparatory ones for their military duties. While an English recruit wants two years to be an efficient soldier, the German recruit is in fourteen or fifteen weeks sufficiently trained for the company drill; as the company is the unit of the battalion and of the regiment, we may say that he is an efficient soldier. Please to think of the saving in money and time which can be obtained by scientific training.

Will you not be surprised to hear that even the German cavalry recruit is obliged to learn the free exercises while on horseback, without stirrup and reins? According to a General Order of the 6th July, 1871, the Prussians state that their scientific physical training is one of the most important factors in gaining their victories in the wars against Austria and France. "The extraordinary qualities of which our armies have given proof in the last war, their indefatigable vigour in marching, the ease and agility with which, in a hostile country, they have overcome all natural and other impediments, their courage and presence of mind, their endurance in supporting privation and suffering, must be ascribed, in a great measure to the gymnastic instruction of the soldiers first in the schools, and later in their respective regiments."

Hitherto our Government has not thought it worth their while to consider the subject, although the humble author of this address, called their attention to it twenty-six years ago, in a public letter "On the importance of Rational Gymnastics as a Branch of National Education," addressed to the Lord President of the Committee of Council on Education; and a second time in 1870, in a pamphlet entitled "A Plea for the Compulsory Teaching of the Elements of Physical Education."

When foreign countries improve the quality and increase the thickness of the steel plates for covering their men-of-war, when they increase the size of their projectiles, or prepare a 100-ton gun, our Government is alive to the necessity of having the same or still more powerful weapons, and do not hesitate to pay half-a-million of pounds for a man-of-war, or £16,500 sterling for each 100-ton gun. But when it is the question of improving the physique of the real defenders of the country, years pass before they even inquire into the best means of obtaining this object, and the unavoidable effect of the neglect of popular practical hygiene, and of scientific physical education, is the progressive degeneration of the physique of the population in Great Britain. You will find some official and other statistics of this degeneration in the paper on school hygiene, which is in your hands.

Permit me to state but one fact, namely, that in 1845, out of 1,000 recruits, only 105 were under five feet six inches, while in 1874 more than three times as many, namely, 364, were under that height, and consequently the standard of recruits was necessarily and gradually diminished to five feet four-and-a-half inches, and the maximum of age increased from twenty-five to thirty-years. Lord Beaconsfield said, in 1872, in the Free Trade Hall at Manchester, "After all, the first consideration of a Minister should be the health of the people;" further, "If the stature of the race every ten years diminishes, the history of that country will soon be the history of the past." According to the views of the Prime Minister, the history of England will soon be the history of the past,and Macaulay's New Zealander has, therefore, hopes of sitting sooner than expected on the ruins of London Bridge. According to the *Times* of October, 1878, the present Ministry took office with a sanitary programme, which, as yet, they have done nothing to fulfil. Although twenty-four months have passed since, the Education Department has not taken any steps for introducing elementary hygiene and scientific physical education as obligatory studies.

There is scarcely time to enter on the practical introduction of scientific physical education into schools, which should form part of this address. Before reading a few suggestions on this subject, I will just mention that the Swedish Government and Parliament were the first to establish and support, in 1813, the Royal Swedish Central Training Institution, for Gymnastics, at Stockholm, in which officers of the army, medical men, and male and female teachers, after having previously obtained their certificates, are for two years gratuitously instructed in the various branches of scientific gymnastics—including hygiene, anatomy, physiology, the history, theory, and practice of rational gymnastics, as well as the knowledge of several internal complaints, and of various deformities and their gymnastic treatment.

During my last holidays I visited this institution, and, by the kindness of the professors and teachers, was able to convince myself of the excellence of the arrangements, as well as the theoretical and practical methods of instruction. There is a similar institution in Berlin, also in Wurtemburg and some other countries, but none can rival the Swedish one.

Two years ago I sent a young physician abroad for the purpose of obtaining information regarding scientific physical education on the Continent. Having prepared a list of fourteen questions, my commissioner obtained official answers from their Excellencies the Ministers of Education in Belgium, Prussia, and Austria. He had besides to report on the practical physical training in the schools which he visited in Paris, Brussels, Ghent, Berlin, Vienna, and Milan. An extract from this report is published in the pamphlet I have mentioned. The aim in making these inquiries was to gather information for myself, and to enable me to show Parliament and the Education Department how behindhand we are in an important branch of education, how many lives we sacrifice, how many diseases we cause, and how many millions of money we lose by the loss of valuable lives, and by supporting in workhouses, hospitals, and charitable institutions large numbers of people unable to work in consequence of disease and deformity. Having met with failure in my endeavors, I have accepted with much pleasure your invitation of addressing you, in hope that, by the powerful aid of this Conference, any suggestions I have to make may be carried out.

The School Board of London is the only one in England which has appointed a perfectly competent lady superintendent of scientific physical education, who is at present engaged in giving three elementary courses to the schoolmistresses who voluntarily attend. A small number of schoolmistresses passed an examination last year, and could at once introduce what they have learnt hitherto, but no time is given or fixed for physical exercises, which should be considered as the other subjects of instruction. In many schools there is no sufficient space for exercises, nor sufficiently large rooms in which the furniture could be easily removed in a few minutes. The covering and partial enclosure of playgrounds is an additional expense to which the ratepayers object. But, even if these impediments were removed, there is still the want of inducement for these teachers giving gratuitously their time and work, and thereby lessening their chance of passing their pupils in the subjects for which they are paid.

To make the resolution practical several modes might be suggested:—

1. To send a deputation of this Conference, accompanied by a number of influential members of Parliament, to the Lord President and Vice-President of the Committee of Council on Education, to impress upon them the necessity of establishing a Central Training Institute for Physical Education, or to subscribe to a few or all training colleges for the purpose of enabling them to give a similar instruction to all future teachers.

2. To petition Parliament to grant payment to the teachers who, at present, being paid only for reading, writing, and arthmetic,

cannot be expected gratuitously to give their time for learning and teaching, or to ask for a Royal Commission.

3. Formation of a society for the instruction of popular practical hygiene and scientific physical training, which are most intimately connected—a society which has been suggested by the *Educational Times*.

PROGRESS OF EDUCATION IN JAPAN.

To the Editor of the Canada School Journal.

SIR,—The enlightened senior Vice-Minister of Education in Japan, (Justice TANAKA—FUJIMARA,) with whom I formed a pleasant acquaintance at Philadelphia, has just sent to me his annual report on the state of schools in Japan in 1877-78.

In an introductory paragraph, Vice-Minister Tanaka speaks of a fear that was entertained that serious educational embarrassment would be felt throughout the country owing to the "serious political events which had occurred" in the empire. "It is gratifying to find, however, that these fears were groundless. "The impetuous current of progress," he says, "was too strong to be retarded by such impediments, and society is to be congratulated that not only has the work of the educational system not been arrested, but it has made a steady and uninterrupted advance during the year." As an evidence of this, the Vice-Minister states that in the seven grand school districts or areas into which the empire is divided, the number of elementary schools established was 25,459, of which 24,281 were higher schools, and 1,178 private—being an increase of 794 public schools and a decrease of 282 private schools, showing a net increase of 512 elementary schools. The number of teachers employed was 57,933—56,658 male and 1,275 females. This shows an increase of 7,364 male and 297 female teachers over the number employed during the preceding year. The number of pupils in these schools was 2,162,962—of these, 1,552,410 were boys, and 543,768 girls in the public schools, and 42,332 boys and 24,452 girls in the private. The average attendance at the 25,459 schools was about 85 pupils per school. Compared with the attendance at the schools during the previous year these numbers show an increase of 58,287 boys and 41,881 girls at the public schools. There is, however, yet a vast proportion of the children in Japan of school age, in fact the great majority of them, who do not attend school at all. Thus out of a school population of 5,251,807, only 2,094,298 received instruction, while 3,158,870 attended no school whatever, or received instruction of any kind.

It is nevertheless most gratifying to note that the number who attend school are rapidly increasing, and that while the attendance of boys at the schools had increased 3.93 per cent., the attendance of the girls had increased 8.34 per cent. The percentage in the number of female teachers employed is also sensibly increased. It is noted that while there was a decrease of 111 male teachers in the private schools, there was an increase of eighteen female teachers in the same schools. In the public schools the increase was more marked, it being fourteen per cent. of male teachers as compared with an increase of twenty-three per cent. of female teachers employed. This increase may be accounted for from the fact, that during the year two additional Normal Schools, exclusively for females, were established, and five others already established were opened to females, which had been previously closed to them. These facts indicate a gratifying and growing interest in female education in this old Eastern empire. It is an evidence of appreciation in Japan of the care and culture of women, which is characteristic of European and American civilization, with which that empire has within the last few years been brought into close contact.

The income of the higher schools for the year is set down at $6,700,000. Of this sum, $2,688,000 were derived from "school district rates," $736,000 from "voluntary contributions," $393,000 from school fees, and $545,000 from the Government. The expenditure was $5,365,000. Among its items are, $2,640,000 for teachers' salaries and $424,000 for books and apparatus. The value of schoolhouses in the empire is estimated at $3,164,000; of sites, or school grounds, $265,000; of school apparatus $1,051,000, and of school books $816,000.

There are other matters of interest, relating to high schools and colleges, to which I shall hereafter refer.

Very truly yours,
J. GEO. HODGINS,
Deputy Minister of Education.

THE SUPERANNUATION FUND.

To the Editor of the Canada School Journal.

MR. EDITOR,—At the last meeting of the Ontario Provincial Teachers' Association, a deputation was appointed to wait on the Hon. the Minister of Education, and lay before him a resolution concerning the Superannuation Fund.

The resolution was to the following effect :—That in justice to the teachers of the Province, the clause relating to the Superannuation Fund, which provides that teachers shall teach until sixty years of age, unless disabled, should be amended by introducing a clause giving them permission to retire after twenty-five years' service.

The Minister received them kindly, but said that he was not prepared, just at present, to deal with the matter; he however promised to take the subject up during the next summer, and suggested that some other improvements might be made in the Act.

In view of this promise, I think it would be well that those interested in the matter should give their ideas now, so that when the Minister does take up the subject he may know what the teachers desire, and an Act may be passed that will be definite and satisfactory to all concerned.

I have therefore presumed, Mr. Editor, to send you the few ideas I have on the subject, in the hope that you may find room for them in some corner of your valuable paper, and that other teachers may be induced to give their ideas also.

First then I will remark that it seems to be a pretty general opinion that teachers should be allowed to retire after twenty-five years' service. I do not think that teachers are very exorbitant in their demands when they ask to have the option of retiring after having been in active service for a quarter of a century. The British Government was satisfied to pension off her soldiers after twenty-one years' service, and then gave them a pension to which they had not contributed, while all are aware the teacher does towards his.

The Minister objected, when the deputation argued this point, that the country would lose the services of good teachers while there was still work in them. Well, granting, for argument, this to be true, I think the country should be satisfied with so long a period of faithful service. But as a matter of fact, I do not think the Minister's fears would be realized. I do not see why the teacher should retire on his pension at that age unless compelled by infirmity. His pension at any rate would scarcely be sufficient inducement to make him, especially since the longer the term of service the larger the retiring allowance; so that if he felt able to teach, we may be pretty sure he would continue to do so, and if he did not feel able, then it would be to the interest of the country that he should be allowed, nay, compelled to retire.

Still, in order partly to meet this objection of the Minister, the teacher may be allowed to retire after having taught on a Provincial Certificate for twenty-five years. The teacher would then be somewhere about fifty years of age, just about the age when he, in many cases, begins to find it impossible to keep up to the times, he becomes old and antiquated, his usefulness is about gone. If however he feels he can still do good work, it is optional whether he retires or not. If he retires, he must be satisfied with a much smaller income, and I do not think he will do this if he feels physically and mentally able to earn a larger sum.

I have endeavored then to show that the twenty-five year clause may be an advantage to the teacher, and cannot be a disadvantage to the country, so far as service is concerned.

There is another point I wish to notice, which was mentioned by both the Minister and the deputation, and that is that the pension when it does come is so small as to only go part of the way towards "keeping the wolf from the door." Now, if it only helps to keep the wolf away, how is the worn-out veteran to supplement that help? The Minister suggested that the teachers should pay a larger sum annually than at present, and thus have a larger allowance. I believe the teachers do not desire anything unreasonable, and I feel sure they will cordially agree to anything of this kind which the Minister may propose. I would be quite willing to see the present compulsory amount increased, always supposing the Government gave a corresponding increase, and in addition I would like to see the teachers allowed the option of paying in a further amount on which the Government should give, say, only half a dollar for every dollar paid in. This optional amount may be so limited that in no case should the retiring allowance be greater than about fifty per cent. of what the teacher could earn while in active

service; thus he would have no very great inducement to retire, unless incapacitated by infirmity or some other cause.

We will suppose that the average salary for first-class teachers is seven hundred dollars, then the maximum retiring allowance may be fixed at three hundred and fifty. Now, the present Superannuation Fund would allow this teacher for twenty-five years' service about one hundred and seventy-five dollars, and if he had paid in the optional amout of fourteen dollars each year he would be entitled to seven dollars for each payment, that is another hundred and seventy-five dollars, or three hundred and fifty in all. The teacher would have denied himself considerably during the years of his active service, and without adding so much to the expense of the country would be entitled to a modest income, sufficient with great economy to keep the wolf entirely from the door.

The retiring allowance for the only other grade of Provincial Certificate, namely, the second class, may be the same, or a smaller sum than for first-class. If the sum were smaller it would furnish an additional inducement to the teachers to rise to the higher class. I only notice the holders of old first-class County Board certificates to say that I think that they should share with the most favored class of teachers.

There are some other points which I should like to mention, such as the allowance to the representatives of a deceased teacher, or to teachers leaving the profession, but a regard for the space at your disposal makes me draw these remarks to an abrupt close.

I hope, however, that other teachers will be induced to give their ideas on the subject, and that the fund will be placed on a footing that will be satisfactory to all concerned.

TEACHER.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

DETERMINATION OF THE RATIONAL BINOMIAL FACTORS OF ANY POLYNOMIAL.

1. If in any function of x the coefficient of the highest power of x be unity, and the other coefficients be whole numbers, the binomial factors are of the form $x-k$, where k cannot be a fraction.

For if possible let $k = \frac{a}{b}$, a fraction in its lowest terms; *i.e.*, let $x - \frac{a}{b}$ be a factor of

$$x^n + p_1 x^{n-1} + p_2 x^{n-2} + \ldots\ldots\ldots + p_n \quad (1)$$

in which the coefficients are all integral. Then

$$\left(\frac{a}{b}\right)^n + p_1 \left(\frac{a}{b}\right)^{n-1} + \ldots\ldots\ldots + p_n = 0.$$

Hence, multiplying by b^{n-1} and transposing,

$$-\frac{a^n}{b} = p_1 a^{n-1} + \ldots\ldots\ldots p_n b^{n-1};$$

that is, a fraction in its lowest terms is equal to an integer, which is impossible. Hence the binomial factors of (1) are of the form $x-a$, where a cannot be fractional; it may be a surd, but we shall confine our attention to the determination of factors of the form $x-a$, where a is a whole number.

2. Suppose $x-a$ to be a factor of (1). Then by a well-known theorem,

$$p_n + p_{n-1}a + p_{n-2}a^2 + \ldots + p_1 a^{n-1} + a^n = 0.$$

Divide by a, and

$$\frac{p_n}{a} + p_{n-1} + p_{n-2}a + \ldots + p_1 a^{n-2} + a^{n-1} = 0.$$

Hence, $\frac{p_n}{a}$ must be a whole number; denote it by q_1. Then, dividing by a again,

$$\frac{q_1 + p_{n-1}}{a} + p_{n-2} + \ldots + p_1 a^{n-3} + a^{n-2} = 0.$$

Hence, $\frac{q_1 + p_{n-1}}{a}$ must be a whole number; denote it by q_2. Then, dividing by a again,

$$\frac{q_2 + p_{n-2}}{a} + p_{n-3} + \ldots + a^{n-3} = 0.$$

Proceeding in this way we at length obtain

$$\frac{q_{n-1} + p_1}{a} + 1 = 0.$$

Hence that $x-a$ may be a factor of (1), the last term p_n must be divisible by a, so must the sum of this quotient and the next coefficient (p_{n-1}); so must the sum of this second quotient and the next coefficient (p_{n-2}); so must the sum of this third quotient and the next coefficient (p_{n-3}); and so on, continuing this uniform operation, the sum of each coefficient and the preceding quotient is divisible by a, and the final quotient is -1.

Hence to find the binomial factors of (1), find the factors of the term p_n, that does not involve x. Let a be one of these factors. Divide p_n by a, and to the quotient add p_{n-1}; divide this sum by a, and to the quotient add p_{n-2}, &c. If the final result be -1, we conclude that $x-a$ is a factor of (1); but if the final result be not -1, or if at any stage the division by a produces a fraction, we conclude that $x-a$ is not a factor.

It will be seen by those acquainted with the Theory of Equations that the above is an adaptation of Newton's "Method of Divisors."

NOTE.—The number of factors of p_n to be tried may be lessened by observing that if $x-a$ be a factor, $\frac{f(m)}{a-m}$ is an integer, m being any integer whatever. [Here we denote (1) by $f(x)$, and therefore $m^n + p_1 m^{n-1} + \ldots\ldots$ by $f(m)$].

For, by a theorem previously referred to, $f(m)$ is the remainder on dividing $f(a)$ by $a-m$. Hence

$$\frac{f(a)-f(m)}{a-m} = \text{an integer.}$$

But if $x-a$ be a factor of $f(x)$, $f(a)=0$; hence

$$\frac{f(m)}{a-m} = \text{an integer.}$$

In applying this test it will be found most convenient to let $m = \pm 1$, for then $f(m)$ is most easily calculated, and the test most quickly applied.

Ex. Find the rational binomial factors of $x^3 + 3x^2 - 8x + 10$.

Here the factors of 10 are ± 1, ± 2, ± 5, ± 10. Since the expression does not vanish for $x = \pm 1$, neither $x-1$ nor $x+1$ is a factor.

Next apply the preceding text: Let $m=1$; then $f(1)=6$; hence ± 10 and $+5$ are excluded, since 6 is not divisible by 9, -11, or 4. Let $m=-1$; then $f(-1)=20$; hence $+2$ is excluded, since 20 is not divisible by $2-(-1)$, or 3. Consequently the only numbers we need try are -2 and -5.

$\frac{10}{-2} = -5$; $-5-8=-13$; $\frac{-13}{-2}$ = a fraction, and we need not proceed any farther with -2.

$\frac{10}{-5} = -2$; $-2-8=-10$; $\frac{-10}{-5} = +2$; $+2+8 = +5$; $\frac{+5}{-5} = -1$.

Hence $x+5$ is a factor.

It is customary to arrange the work as follows, putting down the successive quotients and sums in a column with the number we are testing at the head:

-2	-5
-5	-2
-13	-10
×	$+2$
	$+5$
	-1

Ex. Find the rational binomial factors of $x^4-x^3-x^2+19x-42$.

Here the factors of 42 are

$$\pm1,\ \pm2,\ \pm3,\ \pm6,\ \pm7,\ \pm14,\ \pm21.$$

Evidently ±1 are excluded. Next apply the test: Let $m=1$; then $f(1)=-24$; hence ±21, ±14, ±6, are excluded, since 24 is not divisible by any of the numbers 20, -22, 13, -15, 5, -7. Let $m=-1$; then $f(-1)=-60$; hence $+7$ is excluded, since 60 is not divisible by $7-(-1)$ or 8. Consequently the only numbers we need try are ±2, ±3, -7. Using the arrangement employed at the end of the last example, we have

+2	−2	+3	−3	−7
−21	21	−14	14	6
−2	40	5	33	25
−1	−20	×	−11	×
−2	−21		−12	
−1	×		4	
−2			3	
−1			−1	

Hence the factors are $x-2$ and $x+3$.

3. Let the expression whose binomial factors are to be found be of the form $p_o x^n + p_1 x^{n-1} + \ldots + p_n$, where the coefficient of x^n is no longer unity.

Multiply through by p_o^{n-1}, and let $p_o x = y$. The expression then becomes

$$y^n + p_1 y^{n-1} + p_2 p_o y^{n-2} + \ldots + p_{n-1} p_o^{n-2} y + p_n p_o^{n-1}.$$

The factors of this, found as before, will be of the form $y+a$ $y+b$, &c. But $y=p_o x$; $\therefore$ the factors of the original expression are $p_o x+a$, $p_o x+b$, &c., which, however, may require to be reduced by dividing by a numerical factor common to both terms.

Ex. Find the binomial factors of $3x^3-26x^2+34x-12$.

Multiply through by 3^2, and we obtain

$$(3x)^3-26(3x)^2+34\times3(3x)-12\times3^2.$$

i e., if $3x=y$,

$$y^3-26y^2+102y-108.$$

The factors of 108 are

$$\pm1,\ \pm2,\ \pm3,\ \pm5,\ \pm6,\ \pm9,\ \pm12,\ \pm18,\ \pm27,\ \pm36,\ \pm54.$$

Evidently ±1 are excluded. Also $f(1)=31$, and all the rest of the factors are excluded except $+2$. Trying this we have

2
−54
48
24
−2
−1

Hence $y-2$ is the only binomial rational factor; and therefore $3x-2$ is the only binomial rational factor of the original expression.

PROBLEMS.

James Park, of Chatham, sends the following questions in Astronomy:

1. If the Right Ascension and Declination of a star be found by observation to be 142° 14′ and 35° 17′, S., respectively, find its Latitude and Longitude.

2. When the sun's Longitude is 43° 47′, find his Right Ascension and Declination.

3. If by observation it is found that the Sun's Right Ascension is 72° 35′ and his Declination 22° 30′, find the obliquity of the Ecliptic.

4. If the Sun's Longitude be 202° 24′ 15″, and the Moon's Latitude and Longitude be 4° 54′ 30, N., and 89° 25′ 30″, respectively, find the angular distance between their centres.

"Kink" and W. F. M. Your solutions are not correct. You will not be able to find elementary solutions for the problems in question.

J. A. D. So many months have elapsed since we asked for your name that we have lost our note on the matter, and are unable to recollect the purpose for which we wished it.

E. C. asks for a solution of the following:

A loans *B* ten thousand dollars at five per cent. simple interest, payable half-yearly. Afterwards *A* would like to have the interest monthly and in advance; find the average monthly interest.

At the given rate of interest \$1 will amount to \$1.025 in six months; and the only equitable solution will be to find the sum which, paid at the beginning of each month, will in six months at *compound interest* amount to \$·025. If x be this sum,

$$\cdot025 = x(1\cdot025)^{\frac{6}{6}} + x(1\cdot025)^{\frac{5}{6}} + x(1\cdot025)^{\frac{4}{6}} + \ldots\ldots + x(1\cdot025)^{\frac{1}{6}}$$

$$= x(1\cdot025)^{\frac{1}{6}} \frac{(1\cdot025)^{\frac{6}{6}} - 1}{(1\cdot025)^{\frac{1}{6}} - 1}$$

$$\text{or } 1 = x \cdot \frac{1}{1-(1\cdot025)^{-\frac{1}{6}}}$$

$\therefore x = 1-\cdot995893 = \cdot004107.$

Hence monthly interest on \$10,000 is \$41.07.

We fail to see why the expression "simple interest" is used in the problem.

MR. EDITOR,—Our School text-books give several different ways of dealing with partial payments on notes, &c., due on demand, with simple interest. By one method we subtract each payment from the principal, leaving the interest to be paid at the time of settlement. This, of course, injures the lender by withholding the interest on *all* his loan while only a *part* of it remains at interest. To take an extreme case, when the sum of the payments equals or exceeds the principal the balance may remain unpaid for an indefinite time without increasing. By another and more common method, each endorsement applies first to the payment of interest, and any excess of payment over the accrued interest applies to the discharge of principal. This is unfair to the borrower, since, in simple interest, no part of the interest is due until the principal is due. Should it happen that the payment does not exceed the interest accrued the payer gains nothing, but simply loses the use of his money until the time of next payment. The Connecticut rule, the Merchants' rule, and several others used in New England, are more or less open to the same objections.

Principal and therefore interest being due on demand, it follows that when payment of a part of the principal is demanded (or accepted), interest is due on that part only. Hence the following rule:—

Divide each payment by the amount of \$1 at the time when the payment was made. Subtract the result from the principal. The balance is that portion of the principal still due and bearing interest from the original date.

This method seems just to both parties. Has it ever been published?

J. V., St. Stephen, N.B.

[We are unable to say whether J. V.'s rule has ever been published, but it appears entirely equitable, which cannot be said of the other methods to which he refers.—ED.]

Practical Department.

HOW TO GRATIFY AND DEVELOP THE NATURAL DESIRE FOR MENTAL ACTIVITY.

BY JAMES HUGHES, INSPECTOR OF SCHOOLS, TORONTO.

Activity is one of the instincts of childhood. It is not happy unless the mental or physical powers, or both, are engaged. "*Productive activity*" is the corner-stone of the delightful and truly

philosophical system of Froebel. Give a child work to do of a character suited to his age, let it call his mental faculties and manual abilities into play, and he will be *attentive*, not merely because he is occupied, but because his occupation gives him delight. Fellenberg says: "Experience has taught me that *indolence* in young persons is so directly opposite to their natural disposition to activity, that unless it is the consequence of bad education, it is almost invariably connected with some constitutional defect." Hailman says: "Perhaps attention and activity of the mind are convertible terms; for we observe that the mind is never attentive, unless it is aroused to action by some external cause (such as a wonderful object, an exciting scene, a thrilling narrative, a deep sorrow), or by an internal cause—the will." It is important, therefore, in order to secure attention, that every means be taken to awaken and satisfy the child's *mental activity*. To do this it will be found necessary to attend to the following:—

1. Do as little telling as possible when teaching. Of course, the teacher should not try toteach everything by experiment, as he would waste time in doing so. The accumulated knowledge of the ages is a store from which the pupils ought to be allowed to draw largely without making all the necessary discoveries and progressive steps themselves. But whenever the teacher can *lead* his class in the development of a subject he should do so. He should not allow them to wander in search of the gold mines of knowledge, neither should he dig the gold and coin it for them. The word for "schoolmaster" in the Welsh language has a very suggestive meaning. The word for school is "Ysgol," which conveys the meaning at once of progression in learning being step by step, commencing at the lowest rung and going upwards. The Welsh name for schoolmaster is "Ysgolfeister," the full signification being "One that teaches to climb." The teacher should not merely climb himself and throw down to his pupil the treasures which he finds. He should teach each pupil to climb for himself, so that as he goes higher he may grow stronger. "This need for perpetual *telling* is the result of our stupidity, not the child's. We drag it away from the facts,in which it is interested, and which it is actively assimilating for itself; we put before it facts far too complex for it to understand, and therefore distasteful to it; finding that it will not voluntarily acquire these facts, we thrust them into its mind by force of threats and punishment; by thus denying it the knowledge it craves, and cramming it with knowledge it cannot digest, we produce a morbid state of the faculties, and a consequent disgust for knowledge in general; and when, as a result partly of the stolid indolence we have brought on, and partly of still continued unfitness in its studies, the child can understand nothing without explanation, and becomes a mere passive recipient of our instruction, we infer that education must necessarily be carried on thus. Having by our method induced helplessness, we straightway make the helplessness a reason for our method." *

2. Give the pupils their rightful share in the work of study. Too much dependence is placed on eye teaching by many teachers. The observant faculties are certainly of great importance, and the teacher who develops them to a high degree will be well repaid for his trouble. Pupils may *see* a great deal without receiving fixed impressions, however. Seeing does not require intensity of attention. The teacher cannot always be certain that the *looking* child is thinking about the subject in hand. He may look at the teacher, or the blackboard, or at an object, and yet be thinking about his last fishing experience. To require each pupil *to do for himself*, is the only way of absolutely compelling him to attend. It is not receiving knowledge that fixes it in the minds of pupils, but reproducing it. If it can be reproduced by the hand in a visible form, the attention is necessarily continuous. The mind must attend if it has to guide the hand. Each pupil should *do* for himself the map the teacher draws on the board; he must *do* the correction of his own mistakes; and if he is made to *do* work with his hands in learning any subject by even writing down the statements made concerning it, the impressions made will be more permanent than if made in any other way. The inattention so lamentably noticeable in most Sunday Schools and many Public Schools is due to the fact that pupils are mere recipients of information and not *active participators* in the process of learning. They are hearers when they should be doers.

3 Do not weary the minds of the pupils. A proper amount of physical exercise produces beneficial effects on the muscular system; beyond a certain point it is exhaustive. So a judicious amount of mental exercise strengthens and develops the mental powers, but study after the "fatigue point" has been reached has a debilitating effect. The moderate use of the physical powers gives pleasure, and increases the longing for exertion; so the judicious application of the mind awakens greater desire for study, and gives additional power to investigate the problems which may be presented for thought. Professor Pillans held that, "where young people are taught as they ought to be, they are quite as happy in school as at play, seldom less delighted, nay, often more, with the well-directed use of their mental energies, than with that of their muscular powers."

4. Do not overload the minds of the pupils. The carrying power of a child's mind is frequently over-estimated by teachers. Many brilliant boys are made to carry such large loads of knowledge during their school days, that they become mentally paralyzed to a certain extent, and never recover their full vigor of thought. This partly accounts for the fact that so many clever school boys turn out to be only mediocre men. Over-eating causes dyspepsia and destroys the appetite for food. There are mental dyspeptics.

5. Have matches in the various school subjects. Who does not remember the enlivening effects of the spelling matches of his boyhood? So intensely was their attention concentrated upon the subject in hand, that grown men remember distinctly the very words missed by themselves and others in some remarkable contests. Such matches may just as well be conducted in reviewing the other school subjects as in spelling, and their effects in inspiriting classes will always be found to be very beneficial. They should not be held at stated times, or conducted in a formal and indifferent manner by the teacher, or they will lose their interest.

6. Let pupils question each other. The contests which will awaken the highest degree of mental activity on the part of pupils are those conducted by themselves. Confine them to the work actually taught and give them due notice, and such exercises will produce the most satisfactory results. No other plan will set pupils to work for themselves more earnestly and intelligently. It is a good plan in some subjects to prepare a series of questions for the pupils covering the work to be learned. These should not be given that the pupils may merely prepare answers to them, to be recited in a parrot-like manner. They should simply guide to the golden thoughts. They may be of use also to the pupils in preparing for the contests recommended. Professor White, of Oberlin College, says: "The pupils of a certain high school failed to be instructed in 'The Science of Government,' in which weekly exercises had been given to them for nearly a whole term. In despair the principal wrote carefully two hundred questions, covering the whole work. These he placed in the hands of each pupil, and dividing the whole school into two sides, allowed each in turn to question the other side, till he obtained a satisfactory answer, while he sat by to watch the 'slaughter of the innocents.'

* Intellectual Education.—*Herbert Spencer.*

The first exercise was a failure, seeming merely to arouse the school; the second was successful, and the fifth was brilliant."

7. Question while teaching. Some teachers only ask questions while reviewing. This is a serious mistake. To test knowledge is certainly one of the functions of questioning, but it is a subordinate one. Socratic, Instructive, Teaching, or Developing questioning is the most efficacious mode of teaching. It does not simply give information; it arouses the minds of pupils to activity, guides the active minds in the acquisition of knowledge, and sets the stored minds upon the plan of using the information obtained. It develops not only *receptive*, but *productive activity*. "He who gives knowledge to the human mind is a benefactor; but far greater is he who by giving knowledge quickens into activity and productiveness the mind upon which he works. The true teaching process involves the power of *intellectual quickening*, which is that process by which the teacher excites the intellectual powers of his pupils to self-activity in the line of his teaching; and to be really effective it must also lead to the courses of thought, feeling, purpose, and action, which are the proper products of the truth taught."

Teachers should talk and tell less, and draw out more. Questioning from the known to the unknown welds the links in the chain of knowledge as they are formed, so that when completed they are not merely isolated facts. It gives a pupil a conscious power to show him that he can overcome difficulties for himself.

8. Use Illustrations. There are several kinds of illustrations. The following should be largely used in teaching:—

1. *Blackboard illustration.*
2. *Picture, map, and chart illustration.*
3. *Model illustration.*
4. *Object illustration.*
5. *Illustration by experiments.*
6. *Dramatic illustration.*

1. Blackboard illustration is of more use than any or perhaps all other kinds of illustration. Every teacher can use it; no teacher should try to teach without it. Its superiority over other methods of illustration consists chiefly in the fact that the work *grows* in the presence of the pupils. They see it made and help to make it, either by actually handling the crayon, or by making suggestions step by step as to what should be done next. The teacher who presents a finished illustration to his class weakens its effect by at least one half. It is nearly as bad to do the whole illustration, even in the presence of the pupils, without explanation to them, or assistance from them at every step. Some teachers work the complete solution of a problem on the board, when illustrating a new rule in arithmetic or algebra, without speaking or even looking at the class until they have finished it. Then they turn round and give the explanation in the stereotyped question, "Do you see?" They would have interested their pupils a great deal more, and have educated them nearly as much, by tossing a copper for "heads or tails." The following rules should be practised in blackboard illustrations:

1. Let the work done be simple in its character.
2. Avoid symbolism, rebuses, &c.
3. Arrange the steps in the process of thought in logical order.
4. Number the various steps either by figures or letters.
5. The steps in the illustration should be done as the process of thought is developed.
6. When illustrating distinctive characteristics, peculiarities of growth or construction, &c., in teaching botany, zoology, natural philosophy, &c., it is well to exaggerate the special parts to which attention should be directed.
7. In solving a problem, making a diagram, drawing a map, explaining the construction of a machine, in fact in all kinds of blackboard work, every pupil ought to do on slate or paper what the teacher does on the board, and usually part by part after him.

2. Picture, map, and chart illustration may be used in conjunction with blackboard illustration, both preceding and following it, to give a correct idea of things as *wholes*, and to show in some cases the coloring, &c. They ought to be used too in testing the accuracy of the work done by the teacher and pupils. For instance, when a map has been sketched it should be compared in its leading outlines with the actual map, to see whether the great features bear their proper relations to each other; whether Florida extends further south than California, etc.

3. Model illustration is used by some teachers very successfully by cutting out the shapes of things or their parts from brown paper, &c. Models of machines, of the parts of the human frame, &c., may be obtained, which will be of great use in teaching some subjects. Good teachers, however, usually try to make most of their own models.

4. In object illustration the pupils should not merely *look at* the things used. They should take them in their hands and examine them. This will enable them to get additional ideas through the sense of touch, and will clearly define those received by looking at the object at a distance. It will also give them a deeper interest in the object to be permitted to handle it. It is sometimes well to state the nature of the information desired before passing an object around, but frequently the pupils should be required to examine specimens with the view of finding out as much as possible about them. This will make them independent observers.

5 Illustration by experiments should as far as possible be conducted on the same principles as object illustration. It produces its highest results when every student performs for himself the experiments described by the teacher. If this cannot be done, the pupils, unless the class be too large, should assist the teacher, each taking some part in preparing for the experiment.

6. Dramatic illustration means representation by action. The living, energetic teacher uses this method of illustration very largely, and if appropriate it always aids greatly in communicating knowledge. It is of much use in giving ideas of shape, size, direction, motion, action of machines, &c. Any one who has ever seen a deaf mute address an audience by *signs*, must have realized to what an extent action may be even substituted for speech. A good teacher always uses his hands and arms to emphasize and illustrate what he says to his class.

In all kinds of illustration it is well to keep the pictures, charts, maps, models, objects, apparatus, &c., out of sight as much as possible until the time arrives for using it. This stimulates the curiosity of the pupils and prevents the distraction of their attention. To show pictures at once, or to present the spectacle of a table covered with apparatus, is a capital method of gaining attention to the pictures or apparatus. It may make it all the more difficult, however, on this account, to get the attention concentrated on the lesson itself.

SCHOOL MANAGEMENT.

BY J. BALDWIN.

Enforcement of Regulations.

How shall I enforce the regulations? How am I to manage to induce the pupils to cheerfully observe the rules?

Few questions are more important, or more difficult to answer. Each one must take into consideration all the conditions, and then

do the best he can. The thoughts here presented are aimed to be suggestive.

REGULARITY.

Irregularity, in country schools especially, is a serious evil. No effort should be spared to reduce it to the minimum.

1. *Intensely Interest the Pupils.* Make the school in the highest degree attractive. Have each one feel that each day is of great value. Point out how closely regularity is connected with success. Deeply interested pupils will generally manage to be regular.

2. *Interest the Parents.* Show how it is that an irregular pupil falls behind his classes and becomes discouraged. The intelligent parent will not willingly detain a child from a single recitation. Teachers must do much missionary work of this kind.

3. *Urge Regularity as a Duty.* The pupil should make the most of himself. He should not act so as to injure others.

4. *Inflict Necessary Punishments.* To say the least, irregularity is a misfortune for which the pupil must suffer. If it becomes chronic, it should work a forfeiture of seat, of position in class, or even of position in school.

PROMPTITUDE.

Than this, no topic connected with school management has been more widely discussed. The general tendency is in the right direction. Schools vie with each other in the effort to secure the utmost promptitude.

1. *Let the Teacher be Prompt.* Usually, the teacher should be at the school-room at least a half hour before the time of opening. The teacher's example greatly influences the pupils.

2. *Impress the Importance of Promptitude as a Habit.* Point out the advantages of promptitude and the evils of tardiness. Show the effects all through life. Give examples. Washington once said to a tardy officer, "Sir, you may waste your own time, but you have no right to waste ours." A healthy sentiment is thus created. Tardiness comes to be considered a misfortune and a disgrace.

3. *Make the Opening Exercises Especially Interesting.* Manage it so that each pupil will even be anxious to be present. The ingenious teacher will know how to do this.

4. *Inflict Right Punishments.* The tardy list works well in some schools. As the tardy pupils enter, they write their names and the minutes tardy. At rest, when the others pass out, these take the tardy seat. If the explanation shows a case of necessary detention, the pupil is excused; otherwise he remains seated during the rest. In some schools tardiness from whatever cause suspends for one day. The pupil remains in seat, but is not permitted to recite. Three cases of tardiness suspend for a month or a term.

5. *Arrange for Exceptional Cases.* Promptitude must be secured at any cost. In some schools tardiness is unknown. But simple justice requires provisions for exceptional cases. Such persons are not considered tardy up to a fixed time. Absolute necessity must characterize all such cases.

6. *Adapt the Treatment to the Community.* The course pursued in the country schools may not be best in city schools. Even in different localities in the country different means must be used. Public sentiment will not sustain extreme measures. Promptitude must be secured by skilful *management.* Any community may be educated to sustain teachers in enforcing strict promptitude.

DECORUM.

This should characterize every voluntary act. Positions, movements, dress, manners, and conduct in school and out, are some of the points to be considered.

1. *The Teacher Should be a Model.* Pupils tend to become like the teacher; hence good manners is an essential qualification of the teacher. An uncouth, ill-mannered, slovenly teacher should never be permitted to disgrace the school-room.

2. *Decorum Conditions Success.* The well-behaved are everywhere preferred to the ill-behaved. "He is a gentleman," is the best of all passports. When pupils are made to realize that the teacher is a lady, it is not difficult to persuade them to try to be decorous.

3. *Teach Decorum Incidentally.* Lectures on the subject do little good. Children must have concrete cases. As these occur, briefly call attention to them, and commend the decorous.

4. *Train to the Habit of Decorum.* Precept is good; example is better; training is best. Training converts precepts and examples into habits. Manage to have the pupils act decorously until decorum becomes a habit. Train them to conduct themselves properly everywhere, and at all times.

5. *Right Punishment may be Used.* Some pupils cannot be reached in any other way. Whatever will work in the pupil an appreciation of good manners and proper conduct, is legitimate. The earnest and continuous efforts to be decorous will soon grow into a life habit.

QUIETUDE.

Study to be quiet—is imperative. All pledge themselves to sustain this regulation. It should be boldly written over every teacher's desk.

1. *Be Quiet Yourself.* A fussy, noisy, boisterous teacher demoralizes the school. Talk in a low tone, move quietly, and avoid all clapping, pounding and stamping. Energy and vigor should be manifested in better ways. It is the lightning that kills.

2. *Secure Quiet from Principle rather than from Fear.* One pupil has no right to disturb others. The effort to be quiet tends to the general good, and hence is a duty.

3. *Boisterousness in the School-Room must Never be Permitted.* During rests, talking and laughing are proper and should be encouraged, but all romping, scuffling and boisterousness must be tabooed.

4. *Train Pupils to the Habit of Quietude.* If a pupil does anything noisily, have him repeat the act quietly. Soon your pupils will become toned down, and will speak and move quietly. Your school will become a quiet, cheerful home.

5. *Use Necessary Punishments.* Some vicious and careless pupils cannot otherwise be cured of noisy habits. Don't mistake. Don't tell the children to sit still. The school-room is a work-shop, and is dedicated, not to silence, but to arousing and directing mental forces. Activity necessitates noise. But the noise of moving classes, of work on board and slate, of live, earnest recitation, is music. Only unnecessary noise is discord.

HOW TO READ HISTORY.

BY MRS. ANNIE SAWYER DOWNS.

The idea often entertained in regard to reading history would be amusing if it were not pitiable. People say, as if announcing inevitable trial: "I really must read some history; I am mortified that I have read so little. Would you begin with Rollin?"

"Why Rollin?"

"I supposed one had to begin with him."

The tone becoming still more tragical. Then I arouse myself.

"Do you really want to read history?"

"Yes,"—sadly but firmly.

"Why?"

"Because everybody ought to know something of the past."

"Why?" I persist.

"Well, look at yourself, for instance; your knowledge of history adds so much to your pleasure when you travel, and seems to help you so much in your criticisms of the life and literature of to-day."

"But why do you sigh as if you were a martyr?"

"Because I hate history; it is dull, it is confused; I cannot remember it."

"Do you forget the novels you read last summer, or the people you met at the sea shore?"

"Certainly not; but they are so different. Why, the novels were interesting, and the people were either so charming or so disagreeable, so brilliant or so stupid, that I must be a dunce to forget them."

"Is there no one among all historical people that you care about?"

"Yes, I should like to know about Richard the Lion-Hearted."

"Then, in the name of all that is sensible, why, if you want to find out about Richard of the Lion Heart, do you begin with *Rollin's Ancient History?*"

"I supposed you had to take a course."

And again appears the tone of heroic melancholy, as if "taking a course" was only a little less to be deplored than scaling the enemy's works with the forlorn hope. Now what should I do if I were oppressed with a sense of responsibility towards history, and the only person I cared about within her ranks was he of the Lion Heart? Go to Lingard's endless volumes; to Hallam's *Middle Ages;* Milman's *Latin Christianity;* or any of the ponderous histories of the Crusades? No; I should put my magic lantern in order, hang up my screen, and throw upon it again and again those marvellous pictures from *Ivanhoe, The Talisman,* and *The Betrothed.* Through these pictures I should sit beside Richard in palace and chamber, should kneel with him at the high altar, and strike with him on the tented field. I should look into his bright blue eyes, should see his yellow hair floating in the soft southern air; and I dare say for a time should not care where, or in what century, he lived his mortal life. But after I knew Richard as I know my own brothers, I should surely ask who is the lovely woman he alternately caresses and despises? His Queen Berengaria? How came she his queen? Why lingers she here on these blood-stained sands, instead of living at ease in the stately palaces in distant England? Ah! you see I am driven to Agnes Strickland's *Lives of the Queens of England,* without dreaming of them as history at all. Fancy how I should devour every word of her record! Those with whom she spent her days, whom she loved, whom hated, would be to me more than the companions of my own bed and board. And as I note how, after some act of weakness or folly, she crouches terror-stricken before her enraged husband, and read that with all the violence of his race he roughly thrusts her from him, shall I not enquire, what was this man's race that he excuses his savage excesses by saying: "As of old, the Plantagenet is the offspring of a fiend." And the brothers with whom he was always striving, and that Philip, who sent like wildfire through Europe the warning cry: "Look out for yourselves, the devil is loose again," when he escaped from one of his innumerable captivities,—can I rest until I know all that any one knows of them?

And as I find myself in the presence of his parents, that Henry and that Eleanor of bitter memory, and see the latter hunting, like a sleuth-hound, the husband for whom she had sinned so grievously, to the hidden bower of Rosamond, and ever after, in burning revenge, stirring up the fiery hearts of their wretched brood of sons against him; or hear the shrill cries of Becket's murderers disturbing the midnight dreams of shuddering Europe; and, last of all, shrink with horror from the blasphemous curse that Henry flings back upon his God as he writhes upon his frenzied death-bed, must I not find out what page of this unhappy world could harbor so much human misery? And as Plantagenet, Angevin, Norman, and Saxon cross and recross the confused pages, shall I not be driven to Freeman's *Norman Conquest,* lest my brain should reel in its frenzy of ignorance?

No fear of my stopping now. I shall trace the stream to its source, and even reach "Rollin" in time. I shall not be contented with rapid strides in that direction alone. I shall insist on understanding each particular in the lives of those who sat in Richard's seat, and won his crown after he had laid it by. So you see I should find myself possessed of all historical knowledge through my interest in this daring crusader, whose sword and shield have hung rusted and dull for so many centuries.

I am convinced, for almost all readers, this is the only way to read history with profit. As well eat when you are not hungry, as read when you are not interested; and, unfortunately, the older histories are dull through their formalism and pedantry, and will only be sought by those born with a passion to know how time has been filled up since the flood.

So the way is to take anybody you care for, and plunge in; the wave that bore him on will sweep you into the current of universal knowledge.—*Congregationalist.*

COUNTY COMPETITIVE EXAMINATION OF SCHOOLS.

Class V.

ARITHMETIC.

(1) Define vulgar, decimal, compound, complex, and proper fractions, giving an example of each.
(2) Find the *total* cost of papering a room at 8 cts. per square yard, and of the paper at 8 cts. per roll, the room being 12 ft. by 18, the ceiling 10 feet from the floor, and the paper 15 inches wide, and 13 yds. in a roll, no allowance being made for doors or windows.
(3) Find what fraction 7 ft 111 in. is of one acre.
(4) Multiply the sum of $3\frac{2}{3}$, $4\frac{3}{4}$ and $4\frac{4}{5}$ by the difference of $7\frac{6}{7}$ and $5\frac{5}{8}$; and divide the product by the sum of $94\frac{1}{3}$ and $93\frac{1}{9}$.
(5) Find the value of ·2775 of 1 sq. yd. 3 ft. 72 in.
(6) Find the difference of 17·428571 sq. ft. and 100·8 sq in.
(7) If 4 reapers receive $11.04 for $3\frac{1}{2}$ days' work, how many men may be hired for $16\frac{1}{2}$ days for $105.08.
(8) If I buy $2500 of Bank Stock at a premium of 8 per cent., immediately sell it out at a premium of $9\frac{1}{2}$ per cent., and invest in 3 per cents. at 106, what interest do I now get on the sum originally invested?
(9) A man was hired for 50 days at 75 cts. per day, for each day he worked, with the understanding that he was to pay 25 cents per day for each day he was idle. At the end of the time he received $27.50. How many days did he work?
(10) Find the length in inches correct to 5 decimal places of one side of a square piece of board that contains exactly half of a square foot.
(11) Find the proceeds of a note for $225 due in 3 months, discounted at the Bank at 8 per cent.

Values—9 each for first ten. Last one, 10.
Note—Full work required.

Class V

GRAMMAR.

(1) Define—conjugation, gender, orthography, syntax, tense.
(2) Give the plural of—tax, brush, valley, index, flagstaff, brother-in-law, potato, elf, portico.
(3) Give four nouns, denoting objects either male or female.
(4) Give the feminine of—lad, male, wizard, czar, tailor, tutor, shepherd, landlord.
(5) Give the past tense and the present, and the past participle of think, wear, climb, freeze.
(6) Decline "mouse" and "goose" in both numbers.

(7) Analyze the following passage, telling the kind and relation of each sentence :

"And *what* man, seeing this,
And *having* human *feelings*, *does* not *blush*,
And *hang* his head, *to think himself a man ?*
I *would* not *have* a slave to till my ground,
To carry me, to fan me *while* I sleep,
And *tremble* when I wake, *for all* the *wealth*
That sinews bought and sold have ever earned."

(8) Parse the words in italics.
(9) Correct or justify, giving reasons, the following :
(*a*) I have just came home.
(*b*) Will you learn John his lesson ?
(*c*) Let he and me go to school.
Values—(1) 5, (2) 5, (3) 4, (4) 4, (5) 12, (6) 10, (7) 30, (8) 24, (9) 6.

Class IV.

ARITHMETIC.

(1) Find the greatest common measure of 13260, 3094 and 4420.
(2) How many bricks 8 in. long, 4 in. wide, and $2\frac{1}{2}$ in. thick, will be required for a wall 28 ft. long, 15 ft. high, and 28 in. thick ?
(3) Divide 729 yds. 3 qrs. 3 na. 1 in. by 7 yds. 1 qr. 1 na. 1 in.
(4) Reduce $\frac{1}{4}$ of an ounce to the decimal of a pound avoirdupois.
(5) What is the value of—·015625 of a bushel ?
(6) Divide—·003294392 by 7·894 without reducing to fractions.
(7) Find the value of 719630 lbs. of wheat at $1.40 per bushel, and 73433 lbs. of oats at 32 cts. per bushel.
(8) If $17\frac{3}{5}$ tons of hay last 15 horses $107\frac{3}{4}$ days, how long will $11\frac{1}{7}$ tons last them ?
(9) Find the price of 32a. 1r. 14per. of land at $120.46 per acre.
(10) Find the interest on $44.56 for 3 yrs. 5 mos. at $8\frac{1}{2}$ per cent.
(11) Divide 281 acres of land among *A*, *B* and *C*, giving *A* 25 acres more than *B*, and *B* 36 more than *C*, and find the value of each one's share at $10.75 per acre.
Values—8 each, except the last, which is 20.
Note—*All* the work must be put down.

Class IV.

GRAMMAR.

(1) Define conjunction, tense, infinitive mood, complex sentence.
(2) Give the feminine of—heir, lion, emperor, hero ; the plural of court-martial, axis, Mr., and deer.
(3) Compare—old, near, and square.
(4) Analyze the following, naming the kind and relation of each sentence :

"In the radiant islands of the East
Where fragrant spices grow,
A thousand thousand humming-birds
Go glancing to and fro."

(5) Parse all the words except "the," "of," and "a."
(6) Change the following sentences so that passive verbs may be active and active verbs passive :
(*a*) The captain led his soldiers into battle.
(*b*) The letter will be written by James.
(*c*) The dagger was concealed under his cloak by the assassin.
(7) Give the first person singular of each tense of the indicative mood active of the verb walk.
(8) Correct where necessary—
(*a*) Who shall I give it to ?
(*b*) After the bell rang.
Values—(1) 8, (2) 8, (3) 10, (4) 18, (5) 30, (6) 9, (7) 9, (8) 8.

Class III.

ARITHMETIC.

(1) Express 1879 in Roman numerals—and eighty millions one hundred thousand and one in figures.
(2) Define minuend, quotient, composite number, prime number, and factor.
(3) Multiply 400018 by 810004.
(4) Divide 94861 by 24 by *factors*, showing how you get the true remainder. (No value will be given for this example if worked by long division.)
(5) In 1674432 cubic inches of wood how many cords ?
(6) If there are 5 tons, 3 cwt., 3 qrs., 24 lbs. of hay in a stack, how much would there be in 15 such stacks ?
(7) Find the G. C. M. of 69120 and 103680, and the L. C. M. of 3, 4, 8, 10, 15, 24, 36.
(8) From $982\frac{17}{81}$ take $29\frac{1}{20}$.
Values—(2) 5, each of the others, 10.

Class III.

GRAMMAR.

(1) Define noun, pronoun, verb.
(2) Tell the part of speech of each word in the following :—"We are accustomed to look for our heroes among those who encounter their fellow-men amid the din of battle."
(3) Give the plural of tooth, ox ; the masculine of sister, queen ; the feminine of sir, duke ; the comparative and superlative of ill, and worthless.
(4) Divide the following sentences into noun part and verb part :
"No hive hast thou of hoarded sweets."
"A transient calm the happy scenes bestow."
"Too great a variety of studies dissipates the mind."
Values—(1) 3, (2) 17, (3) 10, (4) 10.

Exchange Department.

In this department questions submitted by teachers will be inserted, that they may be discussed by those who are desirous of either giving or receiving light in regard to them.

1. "An ordinary prosperous Englishman" implies that prosperous Englishmen are common, and that the person referred to is one of them. But if the meaning be that this particular Englishman is as prosperous as the generality of his countrymen, then, of course, "ordinary" should be changed to "ordinarily," unless the whole expression be altered.

2. "To the middle of the 15th century" is not a "sentence." If the preceding words were given, it would be easier to answer the inquiry. But it is generally better to use "till" than "to" before words indicating the time at which something terminates.

3. "Previous to," meaning the same as "before," is good English. If, however, it offends the critical ear to use an adjective, or a word that looks like an adjective, after "is formed," then the preposition "before" may be used.

4. There is a misconception here. We should read according to the sense, not simply according to punctuation. Punctuation marks, when properly used, aid us, of course, in discovering the construction of sentences and in discerning the writer's meaning. The querist (M.D.) evidently has not clear notions as to rising and falling inflections. Many persons (even teachers) who read well, have not learned to distinguish these. "Raise your voice" commonly means "speak louder," or "speak in a higher key ;" and "lower your voice" means the reverse. But a *rising inflection* is an upward slide, through several tones of the scale on a single word ; and a *falling inflection* is a downward slide, beginning several tones higher than the level of the preceding words, and descending a little below that level. Without attempting just now to give rules for the use of these slides, I may say that such exclamations as those in the passage quoted commonly require the *falling* inflection—not the rising, as M. D. seems to think.

5. "The whole," "what time," "during the time when," or else "the while," "while" (adverbial conjunction) : I prefer the former. But teachers should bear in mind that it is sometimes impossible and unnecessary to parse the words of an idiomatic phrase.

H. C. C.

To the Editor of the Canada School Journal.

SIR,—We see in the JOURNAL occasional communications from the author of the grammar in use in our schools. With this proof that our author is no mythical or anonymous personage, I make bold, with your permission, to ask a few questions, which I hope he will answer if they seem of sufficient importance.

1. In what way are we to understand the assertion that an adverb or adverbial phrase is never a complement of a verb of incomplete predication? What is the difference in the structure of the following sentences: "The man is rich," and "The man is here?" If in the second the verb is a verb of existence, and is equivalent to "the man exists here," then why not "the man exists rich?"

2. If an adverb may modify a noun when the latter is in the attributive or predicative relation, why not likewise when it is the subject of a sentence? What different function has "only" in "he buys wheat only," and "wheat only is bought?"

3. The word "complement" seems used especially to mark something distinct from the object of transitive verbs. How are we to understand "the infinitive complement making the *object* of a verb of incomplete predication?" In "can," or "ken," "know," or "ought," "owns" or "owes," we can easily see that the verb is transitive, though one is followed by "to" and the other is not, which probably does not affect the case. But how can we make "may" or "must" a transitive verb? And if by derivation, or old use, these words are all transitive, what need of the word "complement?"

4. How are we to express the different uses of "will?" "The tree will soon fall" (future tense, of course), "I will not consent" (simple determination), "He willed the death," &c. (regular, or weak, and transitive). Now, what are we to say? different parts of same word? or different words? What constitutes a *word?* Are we to go ahead and parse a word as we find it used, regardless of form or derivation? In preface to our Grammar we are charged to observe the *functions* of words, as "nothing is more hurtful than mechanical directions." Elsewhere (page 217 Exercises) we read, "In analysis and parsing, *grammatical form* is the essential thing." Italics are, presumably, the author's.

"In 'I can but lament the result,' but is a preposition, and in all such constructions there is an improper omission of a negative." What shall we do with this from Comus, "If I but wave this wand?" A score of such constructions could be quoted in a very few pages of Shakespeare.

"'He hadn't ought to do it' is grammatical, though vulgar." In what sense are we to understand the word grammatical?

"All true adjectives can be used both ways," *i. e.* attributively and predicatively; in another place we are told we "can make nothing of 'afraid' but an adjective." Can we say "an *afraid* man?" And in "the man is asleep," and "the ship is ashore," how shall we parse, and what reason shall we give for our work?

DISCIPULUS.

Notes and News.

ONTARIO.

Mr. H. M. Clark, a teacher from the County of Bruce, Ont., has just graduated from the Philadelphia School of Elocution and Oratory with first-class honors.

We are glad to note that the Ontario Art School is to receive a grant of $4,500 this year from the Government.

The attendance at the Toronto Public Schools is 9386.

There are 1442 pupils in the Brantford Schools.

The registered attendance in Guelph High School is 158.

Stratford Public Schools have 1148 pupils in attendance. The High School has 180 on the roll.

The Peterborough Schools have 1126 pupils in attendance.

London Collegiate Institute has an attendance of 143 boys and 142 girls.

The sum of $125 was granted by the Stratford Board of Trustees to Mr. Dickenson for extra services in conducting the Model School in 1879.

Brantford School Board has adopted the following resolutions respecting promotion examinations: (1) That the examination do not take place in the presence of the teacher of the division being examined. (2) That the standard for promotion be 50 per cent. (3) That the reports as to the results of the examination be made by the Principal. (4) That the marks for writing be not taken into consideration in estimating the marks required for promotion.

The examinations in the several military districts for admission into the Royal Military College will, in future, be held annually in July, instead of semi-annually.

For thirty years three clergymen have presided over the Perth School Board.

Literary Societies have recently been organized in connection with Newcastle and Toronto High Schools.

The *Port Hope Times* speaks thus of the schools in that town: "It is extremely gratifying to be able to record that the schools of Port Hope, since Mr. Goggin became head-master, have become thorough institutions of learning. His capacity for organization is very great, and he has consequently succeeded in carrying out an excellent system of grading. Every teacher knows just what is expected from him or her, and the work goes on simultaneously and well. Mr. Goggin deserves praise for his work, and is to be congratulated on the fact that the teachers under him recognise his fitness for the position."

Mr. Somerset, Public School Inspector, addresses the following suggestions to teachers, trustees, and parents in his Annual Report:

Teachers.—The marked improvement visible in the spelling and writing in the majority of schools is a cause of great encouragement. Most teachers now realize the importance of strict personal attention to the writing of each child—even the smallest; also the usefulness of the writing exercise in employing the small scholars, and of making the study of other subjects easy.

The geography papers suggest greater attention to the spelling of geographical names; the avoidance of keeping the pupils—small classes especially, too long at the map of one particular continent or country; the desirability of giving interesting facts concerning the people and productions of a country, in addition to dry lists of names.

The arithmetic papers suggest greater attention to neatness and system in the working of questions. This remark will also apply to the papers on the other subjects. The means of effecting this is by giving occasional *written examinations*. The examination of the pupil's papers show quite clearly which schools have been in the habit of employing this exercise.

Trustees.—I can only repeat a suggestion made last year: Give greater attention to the small repairs and to the cleansing of your school-houses. Your children are there seven hours each day, and it is surely no great tax on the time of three trustees to see that their surroundings are clean and comfortable during that time. See that public examinations are held at least every half year; if the teacher seems slack about it, show him that you expect it to be done. These examinations enliven and stimulate schools that hold them.

Parents.—So much has been said about irregularity of attendance that it may be assumed that parents are now fully aware of its evil influence on the progress of our schools. It only remains for each one to endeavor to remove or reduce its extent by practising the greatest possible regularity in the attendance of his children. Any parent complaining of the slow progress his children make is placed entirely in the wrong, if the teacher is able to show, in reply, an attendance of broken periods of a few days each.

The timely provision of the necessary books, slates, pencils, &c., for the children is also a matter requiring greater attention from some parents. Its absence frequently causes great embarrassment and delay in the work of the class, as well as the individual scholar.

The use of monthly reports of the conduct and progress of each child is now being generally adopted. Their success depends entirely upon the interest parents take in them, and it is therefore hoped there will be a hearty response from them when the teacher invites their co-operation in this matter.

NOVA SCOTIA.

Since last month's notes were written, the untimely death, at the early age of 43, of James De Mille, A.M., Professor of Rhetoric in Dalhousie College, has called forth numerous expressions of sincere regret. Professor De Mille's works of fiction and humor, "Helena's Household," "The Cord and Crease," The Dodge Club," etc., are well known, and stamp him as an author combining originality of conception with power of expression. The vacancy caused by his death in Provincial educational circles cannot easily be filled. His recently published treatise on "Rhetoric," already adopted as a text-book in many leading institutions, shows how admirable were his qualifications for his special professorship. As a lecturer he was remarkably lucid, and enchained the attention of his classes.

He had filled the post of Examiner in English Literature in the Halifax University from the foundation of that Institution. Though working in another sphere, Professor De Mille was in lively sympathy with the cause of Common Schools.

An omission of the number of pupil teachers at the Normal School who are working for *first class licenses*, occurred (the *notator* assumes through a lapse of the printer) in the brief paragraph of last month's notes referring to the Normal School. The number sent us, we believe, was about 20.

During the month of February, the Superintendent of Education visited the Normal School at Truro, the Pictou Academy, and the High School and County Academy at Guysboro'. He also spent some time at Antigonish, where he was invited to visit the classes of St. Francis Xavier's College, an Institution affiliated with the Halifax University.

R. J. J. Emmerson, Esq., A.B., of Dalhousie, has been appointed Principal of Guysboro' Academy.

F. G. Harrington, grade A, 1879, has assumed charge of the Liverpool Academy. The principalship of this Institution was resigned by T. R. Patillo, Esq., A. M., on his appointment to the inspectorship of Division No. 2 (Counties of Lunenburg and Queens).

From the accidental substitution in last month's "Official Department" of "Minister" for "Superintendent," the Windsor *Mail* infers an intention on the part of the Government to create a Departmental Bureau of Education, as in Ontario. This is not, we believe, a case in which "coming events cast their shadows before."

NEW BRUNSWICK.

The Lieut.-Governor being a member of the Board of Education, the death of the late Governor, Hon. E. B. Chandler, and the appointment of Hon. Senator Wilmot as his successor, has made an important change in the *personnel* of that body.

Hon. Judge Stevens, of the County Court, has been appointed Chairman of the Board of School Trustees of the town of St. Stephens; and Wm. T. Rose, Esq., has been appointed a member of the Board. These appointments are made by the Government.

The Truro Council some time since chose R. Wilson, Esq., to be a Trustee of Schools, in place of H. Graham, Esq., resigned.

P. McPeake, Esq., was appointed by the City Council of Fredericton to be a member of the Board of School Trustees, in place of P. Dever, Esq., resigned.

The Chief Superintendent delivered an educational lecture at Nashwaaksis, Parish of Douglas, on the 12th February, in the course of which the character and objects of the recent changes in relation to inspection and the course of instruction were pretty fully discussed.

Very much good may, and no doubt will, be accomplished by the Inspectors in the way of correcting misapprehension, and removing difficulties that arise from the fact that many people take a partial and one-sided view of the situation. We are informed that "Ingram B. Oakes, A.B., Inspector of District No. 5, and D. P. Wetmore, Esq., Inspector of District No. 4, are very successfully awakening a deeper interest in education and a sympathy with the 'new departure,' by delivering public addresses on their tours of visitation."

A complete list of the schools in which the Governor-General's medals are offered for competition has not yet been obtained. The usefulness of these prizes must depend very much upon the basis of award. This, no doubt, is determined in all cases by the authorities of the several institutions, subject to His Excellency's approval. If the offer of a prize merely stimulates a few students or pupils to strenuous exertions in one particular direction, as for example in the preparation of an essay on a specific subject, the benefit conferred is hardly commensurate with the outlay.

In the Provincial Normal School, the silver medal is to be given at the close of each session to the student-teacher having the highest "professional standing." This depends mainly upon the estimates of professional knowledge and professional skill, but also takes into account the general scholarship, deportment, punctuality and regularity of attendance.

In the Model School (highest department) the pupil having the highest school standing for the term will receive the medal. This is as far removed as possible from a premium on specialties, since it includes progress in studies, diligence, good conduct, punctuality and regular attendance.

On the 12th and 13th of February, the Westmorland County Teachers' Institute met at Dorchester, with Mr. J. G. McCurdy, the retiring President, in the chair. For some reason unknown, the Inspector, Mr. Geo. Smith, A.B., was not present; but he was nevertheless elected President for the ensuing year. Mr. A. J. Denton, A.B., of Shediac, was chosen Vice-President; Miss L. A. Seamen, Secretary-Treasurer; Miss Maggie Harris and Mr. C. E. Lund, additional members of Committee.

The present session of the Provincial Normal School will close on Friday, the 12th March, when there will be the usual exercises.

The March Examination of candidates for license will take place at Fredericton, beginning on Tuesday, the 16th.

QUEBEC.

A special meeting of the Protestant Committee of the Council of Public Instruction for the Province of Quebec took place in the Education Office on the 4th Feb. Those present, after having heard the letters of apology read, resolved themselves into a sub-committee for the conduct of business, and left their acts to be confirmed by the next quarterly meeting. The following is a summary of the business transacted:

(*a*) A new form of returns for inspectors of academies and model schools, prepared by the secretary on the plan suggested by the Lord Bishop of Quebec, was recommended for adoption, as was also a uniform set of text-books.

(*b*) Every pupil before being enrolled as an academy or model school student must pass a satisfactory examination in reading and spelling by dictation, including 4th Reader; in writing; in arithmetic, to the end of vulgar fractions; and in geography and grammar: the examination to be conducted by the principal of the school.

(*c*) None but certificated teachers or those holding legal diplomas shall be allowed to teach in an academy or model school.

(*d*) Inspectors must have completed the inspection of all the schools and academies by the 24th of March.

(*e*) When a district shall raise $80 in addition to its share of school monies, and when in the school in that district model school subjects shall be taught, the commissioners may report such school as a model school.

(*f*) The Rev. F. I. B. Allnutt, D.D., of Drummondville, was appointed inspector of academies and model schools

(*g*) Inspectors are to recommend the principals of academies and model schools to adopt the course of studies in harmony with the universities.

(*h*) The amended form for teachers' diplomas, drawn up by Dr. Cornish, was handed to the Hon. the Superintendent to report thereon.

The quarterly meeting of the Protestant Committee took place in the Education Office, Quebec, on the 25th of Feb. Present:—Dr. Dawson, R. W. Heneker, Esq., Hon. L. R. Church, Dr. Cook, Hon. W. W. Lynch, and the the Hon. G. Ouimet, Superintendent of Public Instruction. Dr. Cook presided. The sub-committee on inspection was instructed to examine the reports of inspectors of academies and model schools, and to report on the distribution of the education fund before the August meeting. With reference to normal school fees and balances unappropriated of the grants for common schools, it was resolved that all such sums and monies shall remain at the credit and disposal of the committee, and that the committee shall render an account of the expenditure of the same to the Hon. the Superintendent for the information of the Legislature. An interesting conference was held between the Protestant and Catholic sections of the Education Committees of the Province of Quebec on the subject of the proposed consolidation of the education laws. The bill is to be printed in Englsh. The different classes of the population and their separation are more fully defined in it; and the Protestant committee wishes to consider carefully how the new bill will bear on the education of Protestants. Definitions are given in the new bill of the terms Roman Catholics, Protestants, mixed and common schools. Arrangements for official supervision and inspection, and classification of different grades of schools, are also attended to. Both sub-committees agreed that it was desirable that graduates in arts should have privileges not at present enjoyed with reference to professional examinations; and also that improved methods of inspection should be adopted. The secretary submitted the accounts of the Contingent Fund, showing a balance of $585.44 in the Bank of Montreal. The committee was of opinion that the claims of Dr. Miles should be promptly settled by the Government. The Superintendent informed the committee that it was his desire to exhibit the scholastic system of the Province of Quebec at the Provincial Exhibition to be held in Montreal in September next, to which the sanction of the committee was most cordially given. Mr. James

Mitchell, rector of the high school, Quebec, was appointed a member of the committee for preparing examination papers for teachers' diplomas. The committee adjourned till Wednesday, 26th May. GEORGE WEIR, Secretary.

MANITOBA.

The annual school meetings have nearly all taken place, on the date specified in the statute, viz., on the first Monday in February; and wherever there were two parties, there has been the usual struggle, followed, in many cases, by letters from both parties to the Superintendent.

The elections in Winnipeg resulted in the return of Messrs. Belch, Stewart, and Mulvey, old members of the Trustee Board, and Messrs. Markham and Rowe.

Messrs. Belch and Stewart have been re-elected Chairman and Secretary-Treasurer.

Emerson, having quite recently been incorporated as a town, has had its limits as a school district re-adjusted, to correspond with the limits of the corporation, and is now taking advantage of the special clauses in the school law which relate to cities and towns. Having three wards, it is entitled to a Board consisting of nine Trustees. The annual meeting resulted in the election of the following, viz.:—North ward—Messrs. F. Lane, J. W. Whitman, and F. E. Burnham. South ward—Messrs. Chalmers, Armstrong, and Jas. Guthrie. West ward—Messrs. Bradley, Fairbanks, and W. McKechnie.

The meeting adopted a resolution recommending the Trustees to raise $5,000 by debentures for the erection of a new schoolhouse.

The Rev. L. O. Armstrong has been elected chairman, and W. McKechnie Secretary-Treasurer. Mr. T. S. Menary has been reengaged as teacher.

The number of teachers in the Winnipeg Public Schools has been increased. The following is the staff for the current year:—J. B. Ferguson, Principal; P. C. McIntyre, A. H. McIntyre, Mrs. Chisholm, Miss Shore, Miss Wright, Miss McIlroy, Miss S. Harvey, Miss Eyres, and Miss McEwen.

Arrangements are being made to hire an assistant teacher at Portage la Prairie. The present teacher is J. C. Ferguson.

It is likely that a new school house will be built in Selkirk during the summer. Miss Eliza Spencer, who is teacher there, is winning golden opinions from all parties for the very marked progress which her pupils have made during the past year.

There was a large number of candidates at the recent examination of teachers. The Board of Education have, just now, an unusually large number of petitions asking for the creation of school districts in townships hitherto not included in any district. Undoubtedly there will be a large increase in the number of public schools during the year.

Readings and Recitations.

A LESSON.

A little elbow leans upon your knee—
  Your tired knee that has so much to bear—
A child's dear eyes are looking lovingly
  From underneath a thatch of tangled hair.
Perhaps you do not heed the velvet touch
  Of warm, moist fingers holding yours so tight;
You do not prize the blessings overmuch—
  You almost are too tired to pray to-night.

But it is blessedness! A year ago
  I did not see it as I do to-day—
We are all so dull and thankless, and too slow
  To catch the sunshine till it slips away.
And now it seems surpassing strange to me
  That while I wore the badge of motherhood
I did not kiss more oft and tenderly
  The little child that brought me only good.

And if, some night, when you sit down to rest,
  You miss the elbow on your tired knee—
This restless curly head from off your breast,
  This lisping tongue that chatters constantly;
If from your own the dimpled hands had slipped,
  And ne'er would nestle in your palm again,
If the white feet into the grave had tripped—
  I could not blame you for your heartache then.

I wonder that some mothers ever fret
  Their little children clinging to their gown;
Or that the footprints, when the days are wet,
  Are ever black enough to make them frown;
If I could find a little muddy boot,
  Or cap, or jacket, on my chamber floor—
If I could kiss a rosy, restless foot
  And hear it patter in my house once more;

If I could mend a broken cart to-day,
  To-morrow make a kite to reach the sky,
There is no woman in God's world could say
  She was more blissfully content than I!
But ah! the dainty pillow next my own
  Is never rumpled by a shining head!
My singing birdling from its nest has flown—
  The little boy I used to kiss—is dead.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

HALTON.—Halton County Teachers' Association will hold its regular half-yearly meeting at Milton, in the head master's room, on Thursday, Friday and Saturday, 11th, 12th and 13th of March, 1880. PROGRAMME.—Thursday, March 11th, forenoon session, 10.30 a.m.—Opening, reading minutes; appointing committees; reports of Committees. Afternoon session, 1.30 p.m.—Composition to Junior Classes, Mr. R. E. Harrison, S. S. 8, Nelson; Writing, N. Burns, B.A., Principal of Georgetown Academy; School Hygiene, by Dr. Freeman, of Milton. Evening session, 7.30 p.m.—Lecture in the Town Hall, by J. A. McLellan, M.A., LL.D., H. S. I., subject, "National Education." Friday, March 12th, forenoon session—Opening, calling the roll; Grammar, Mr A. J. Moore, Georgetown: Algebra, Dr. McLellan. Afternoon session, 1.30 p.m.—Reading, Dr McLellan; Arithmetic, Mr. Thos. Moore, Acton; Literature, Dr. McLellan. Evening meeting to be arranged for at the Convention. Saturday morning, March 13, 9 a.m.—Opening, calling the roll; Librarian's Report; Question Drawer; Election of officers. R. COATES, Secretary.

NORTH WELLINGTON.—The semi-annual meeting will be held in the Central School, Mount Forest, on Thursday and Friday, March 11th and 12th, 1880. PROGRAMME.—1. Appointment of Committees. 2. Question Drawer opened; 3. How to teach lesson on page 228 of Fourth Book—H. Bailey, head master Mount Forest public school; Critics, Messrs. Denton, Black and Varcoe. 4. Object Lesson with class, and essay on Object Teaching, Miss R. Mitchell, Mount Forest public school; Critics, Messrs. R. Hamilton, Freure and Copland. 5. Reading with Third Class, Miss Burnie, Mount Forest P. S; Critics, Messrs. Reid, Craig and Ironside. 6. Second Class Arithmetic, Miss Minnie Meek, Mount Forest P. S.; Critics, Messrs. Delahunt, Colbeck and Anderson. 7. Teaching, First Tablet with class, Mrs Jelly, Mount Forest P. S.; Critics, Messrs. Clapp, Shields and A. McPherson. 8. Roll Call. 9. Song, Miss Nellie Watson. 10. Question Drawer closed, J. A. McLellan, LL.D. 11. Election of officers. 12. Written Examinations. W. F. McKenzie, Riverstown P. S.; Critics, Messrs. Dickie, Corbett and Jordan. 13. Promotion Examination, by Convention. 14. Physical Education, G. B. Bingham, H. M. Harriston P. S.; Critics, Messrs. Harper, Harvey and P. McEachern. 15. Use and Abuse of Text Books, Alex. Dickie, teacher No. 4 Marybo.o'; Critics, Messrs Bulmer, Hislop and Becker 16. Parsing, and Analysis of page 106 of Fourth Book, Jos. Reid, B.A., H. M. Mount Forest High School; Critics, Dr. McLellan, and Messrs O'Connor and Smith. 17. Analysis of Gray's Elegy, by Convention. Page 356 Fourth Book, Jos. Reid, B.A., Mount Forest High School. 18. Some change in School Law, John H. Burk, Teacher S. S. No. 11, Minto; Critics, Convention. 19. Township Boards, Malcolm Cameron; Critics, Messrs. A. Davidson, Perry and Ogden. 20 How to Teach Reading. Dr. McLellan. 21. How to Teach Arithmetic, Dr. McLellan. 22. Algebra, Dr. McLellan. 23. Natural Philosophy, Wm. O'Connor, M.A., H. M. Harriston High School; Critics, Messrs. Craig, Bingham and Campbell.

D. P. CLAPP, B.A., President.

NORTH HASTINGS.—The quarterly meeting of this Association was held at Stirling, January 31st, 1880. The forenoon session was occupied in the discussion of School Drill and how to teach Arithmetic to Junior Classes, introduced by Wm. Mackintosh, Esq., I. P. S. The subject was most ably and exhaustively handled by Mr. Mackintosh. In a simple, lucid and practical manner, he showed how to teach children to recognize numbers at sight; to compare numbers; to analyze them, and to perform the simple elementary operations of addition and subtraction. An especially noticeable feature was his showing how to teach the principles of carrying. The Association adjourned. A pleasant feature in connection with the meeting was the recognition of the public services of the teachers by several members of the Stirling School Board, who had made arrangements with a leading hotel-keeper to have the teachers dine together as their guests. The courtesy was duly appreciated and acknowledged by the large gathering that enjoyed their hospitality. The Association met again at 3 p.m. The treasurer's report was then read, showing the large balance of $81.81 on hand and in the bank. The auditors, Messrs. Mulloy and Shannon, examined the accounts and reported them correct. Mr. J. Johnston, Inspector P. S., South Hastings, then introduced "How to teach Reading to Second and Third Classes." The subject was ably handled, stress being laid upon the necessity of thorough explanation of the lessons when they are assigned, the importance of teachers being able to set a good model for imitation before their

pupils, and the value of committing the gems of thought studied in connection with the reading exercises to memory. Mr. Mulloy and Mr. Sutherland favored the Association with readings, which were well rendered and received. Association adjourned.

GEO. KIRK, *Secretary* WM. MACKINTOSH, *President.*

Official Department.

AN ACT RESPECTING CERTAIN AMENDMENTS TO THE PUBLIC SCHOOLS ACT.

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. The fourteenth section of the Revised Statute respecting Public Schools is hereby amended, by adding thereto the following: "But in the case of Public Schools in rural School Sections, or of townships, the trustees thereof may open the schools therein on the third day of August in any year after the present year, so that the term may begin in such school or schools on that day instead of the eighteenth day of August, and end on the twenty-third day of December following, but such additional period during which the school may be open shall not be considered in any appropriation of the legislative or municipal grants."

2. The fourth sub-section of section one hundred and sixty of the Public Schools Act is hereby re-enacted, and the following shall be added thereto and form part of the same:—"Provided the school rate paid by such person upon the said property is at least equal to the average school rate paid by the residents of such section or division; and the fees to be imposed upon other non-resident pupils whose parents or guardians do not pay an average school rate in the section or division shall not exceed the sum of fifty cents for each pupil for every calendar month."

3. In the case of every union school section or school division comprised of the whole or parts of two or more municipalities, the union school section or school division, as the case may be, shall be held for the purpose of inspection, the borrowing of money and the issuing of debentures, and for all school purposes, except as hereinafter mentioned, as within the township, town, or village municipality in which the school house is situated, and if there are two or more school houses, then in the municipality with the largest amount of assessed property; and the school rates of such union or school division shall henceforth be collected by the respective collectors of the township, town, or village municipality in which each part of the union or school division is respectively situate, and the taxes shall be so levied and collected in each part of such union or school division for its proportionate amount of the trustees' yearly requisition made to the clerk of the municipality in which the union or school division is deemed to be situate, upon an equalized basis of assessment, and if such equalized basis is not mutually agreed upon on or before the first day of August between the councils of the respective municipalities, this shall be determined by reference to the inspector or inspectors having jurisdiction in the respective municipalities concerned, and other competent persons, one to be chosen by the council of each municipality, and not being a member of such council, and the determination by such referees, or the majority of them, shall be final and conclusive in the premises; and in cases where the number so appointed would be even, then the senior county judge shall be added thereto, and in case of default by any council in appointing a referee on its behalf, on or before the first day of August, a majority of the other referees shall be competent to make such determination. The referees shall be paid the like remuneration as township councillors, as also their travelling expenses, by the trustees of the union or school division, out of the school monies thereof.

(2) Every such equalization shall continue in force for the period of five years, unless any council should before the first day of August in any year require another reference to be held for this purpose; and the clerk of the municipality in which the union or school division is deemed to be situate, shall forthwith certify to the clerks of the several municipalities concerned, the respective amounts which each of them, according to this equalization, are required to place upon the collector's roll of his municipality; and the amounts payable by the several ratepayers in each part of the union shall be such as with an equal rate levied upon all parts of the union shall be sufficient to meet the yearly requisition of the trustees upon the municipalities in which the union or school division is deemed to be situate; and such amounts as and when collected shall be paid by the respective collectors to the treasurer of the municipality in which the union or school division is deemed to be situate.

4. It shall be the duty of every township council to cause the assessor of the township in preparing the annual assessment roll of the township to set down therein, in a separate column, the number of children between the ages of five and sixteen years, opposite the name of each person on the assessment roll who are resident within, and the clerk of the township shall, on or before the first day of July in each year, furnish the Secretary-Treasurer of each school section in the township with a statement of the total number of such children within that section, and shall also furnish the Public School Inspector with a statement of the total number in the township, and any expenses attending the assessment, collection, or payment of school rates by the municipal council or any of its officers for the trustees entitled thereto, shall be payable by the municipality, and the said rates, as and when collected, shall within a reasonable time thereafter, and not later than the twentieth day of December in each year, be paid over to the trustees, without any deduction whatever; and the clerk of each township council shall also, upon request and free of any charge, furnish the Public School Inspector with a true copy of the assessed value of each school section as shown in the revised assessment roll for that year, and also of the several requisitions of the trustees for school monies. The township clerk shall be entitled to reasonable payment from the township council for the above mentioned services. The provisions of this section shall also applyto cities, towns, and villages, and the municipal councils and officers thereof, so far as consistent with any other provisions affecting the same, and shall also apply to Separate School Boards or trustees who may exercise their option of having their school rates collected by the municipal councils and the officers thereof.

5. The trustees of every rural school section and the Public School Board of every town, village or township, shall keep, or cause to be kept, books of account of all school monies of their section, town, village or township (as the case may be), according to such form as may be prescribed by the Minister of Education.

6. It is hereby declared that the provisions contained in section twenty-nine of the Act forty-two Victoria, chapter thirty-four, shall be construed not to apply to school furniture or appliances, ordinary repairs, fencing, sheds, offices, or the like objects.

7. In cases of school divisions within section eighty-three of the Public Schools Act, it shall be competent for the council of the township in which any part of such school division is situate, to withdraw the same or any portion thereof from such school division, and to annex the same to another school section in the same township, or to form a new section thereof by by-law to be passed before the first day of October in any year, and to take effect on the first day of January next following; and in case of any disagreement as to the terms of such withdrawal, the same shall be determined in the manner provided by law with respect to the alteration or dissolution of union school sections.

8. In all cases of the formation, alteration or dissolution of schoo sections within the same township, or of township boards, or of union school sections comprised of the whole or parts of two or more townships, or of school divisions comprised of a town or village, and the whole or parts of one or more townships and by-laws to be passed for any of such purposes shall become absolutely legal and valid, and the jurisdiction of any court to question the same shall be deemed to be ousted when such by-law has been submitted to and confirmed by the Minister of Education, who shall require notice to be given of such application by the parties applying by advertisement or otherwise as he may direct, and the certificate of the Minister of Education endorsed on a certified copy of such by-law shall be conclusive evidence of such confirmation, and the provisions of this section may be taken advantage of for the confirmation of any by-law for any of such purposes heretofore passed and not quashed or otherwise declared invalid, and this section shall be deemed to apply to any such by-law.

9. The one hundred and fortieth section of the Public Schools Act, shall hereafter be construed not to authorize such alteration by the council of either municipality as would add any further portions of the municipality to such union school section; and provisions of section one hundred and fifty of the Public Schools Act shall apply to any case of a dissolution of a union section for any cause whatever.

10. The one hundred and forty-second section of the Public Schools Act is hereby amended so that it shall be necessary that any portion of the township forming a union, or being part of a school division with another municipality or portion thereof, shall be considered as a section in respect of the said requisite number of two-thirds of the school sections of the township.

11. The provisions of any other act or of any special act relating to union school sections or divisions inconsistent with this act are hereby repealed.

12. In any matter or inquiry which the Minister is by law authorized to institute, make or direct, he may, upon application (without notice) to any of the superior courts, or a judge thereof, obtain an order for the issue of a writ or writs of subpœna *ad testificandum*, and also *duces tecum*, to be directed to such person or persons for him or them to attend and give evidence under oath, at such times and places, and before such person or persons as the Minister shall appoint, and any default of any such person in obeying any such subpœna shall be punishable as in the like case in any action or cause in any of the said courts.

13. This act may be cited as "The Public Schools Amendments Act, 1880."

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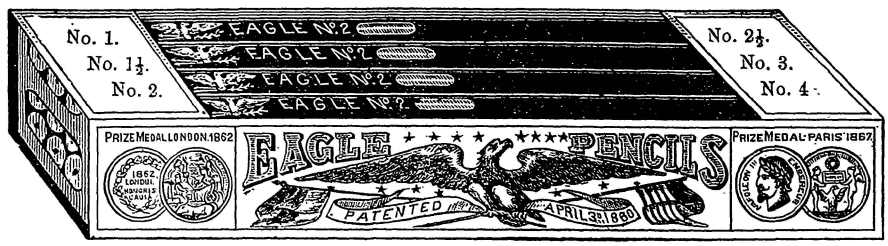

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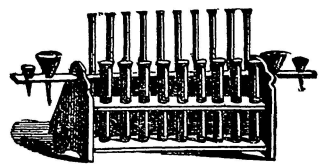

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The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

EDUCATION IN NOVA SCOTIA.

The report of Dr. Allison, Superintendent of Education, for Nova Scotia for the year ended Oct. 31st, 1879, is before us. It funishes interesting information concerning the state of public education in that Province. We learn that during the school term there were registered in the schools 99,094 different pupils, or 1 in 3.9 of the entire population of the Province according to the census of 1876. The total number of teachers employed for the winter term was 1,960, and for the summer term, 2011. The grants to teachers of the Common Schools paid from the Provincial treasury amounted to $151,655.36. Other charges, such as Inspection, Examination, Education Office, High Schools, &c., brought the expenditure for Public Schools to $180,199.80. Add to this $15,200 for colleges, $5,100 for special academies, and $5,075 for the Normal School, and we have a total educational expenditure for the year of $205,574.80, stated to be a decraase of $2,540.11 as compared with the preceding year. The average cost to Government of each pupil registered in the Public Schools was $1.53.

The highest average annual salaries paid to male teachers of the first class were in Halifax City, viz., $733. Yarmouth County follows with $642. To first class female teachers, Halifax City pays an average of $446, and Halifax County of $366.

The Superintendent of Education devotes considerable space to the discussion of Intermediate Education. Copious details are given in the tables of the work done in the County Academies or High Schools, and in the Special Academies of Pictou and Yarmouth, the latter holding to the former, we suppose, a relation somewhat similar to that held by the Collegiate Institutes to the High Schools of Ontario. It is made quite plain that this department is not in a perfectly satisfactory condition. The Superintendent's suggestions looking towards reform are based on the sound doctrine that "the vigorous maintenance of a system of elementary education through the Common Schools of a country is largely conditioned on the adequacy of the provision made for higher instruction." The comparative infrequency of populous centres seems to lie at the root of the difficulty, which Dr. Allison seeks to obviate by a system of High School combining the efforts and resources of several counties.

We take from the report the following facts respecting the colleges of Nova Scotia :

	Undergraduates.			
	Freshmen.	Sophomores.	Juniors.	Seniors.
Kings	7	5	7	10
Dalhousie	14	14	4	5
Acadia	23	12	16	13
St. Francis Xavier's	19	13	12	8
Mount Allison	11	3	6	11
Saint Mary's	20	10	7	3

HIGHER FEMALE EDUCATION IN ENGLAND.

The "logic of events" has happily solved the knotty question of Higher Education for Females in England. What in 1846 was deemed chimerical and unwise, if not unwomanly as a new social "departure," has in 1880 demonstrated not only its entire success, but its immense value as a great moral and social force in elevating the state and promoting the usefulness of large numbers of women in England,—and women too who would otherwise have been dependent and helpless, or aimless and frivolous.

In a late number of the *Nineteenth Century*, Lady Stanley of Alderley has contributed a valuable historical paper on the subject. Right Hon. J. Stansfeld, M.P., has also, in a previous number of the same Review, contributed an able and exhaustive article on the medical education of women. Other writers have also discussed the question. The English public are, therefore, well informed on the subject, and the recent success of Miss C. A. Scott, of Girton College, who obtained the rank of eighth wrangler at Cambridge, has awakened new interest in the subject. In this country little is known practically as to the substantial progress which has been made of late years in England in this important matter. We shall therefore, state the principal facts in regard to it.

The first practical movement made in England was the establishment by the Rev. F. D. Maurice, of Queen's College, London, in 1848, chiefly for governesses. Subsequently its functions were enlarged; and all were made welcome "who could come to the classes." The numbers in attendance have steadily increased, until they now reach 400. The latest change has been in the direction of opening the London University examinations and degrees to the students of Queen's College. Hereafter the matriculation examination of the University will be the goal of the four years' course. A further course may also be taken in the University.

The next substantial movement was made in 1862 by the

University of Cambridge in establishing local intermediate examinations, to which in 1863 young women were admitted. The plan succeeded; and after a time Oxford followed suit, but with this difference, that it admitted boys and girls to the same examinations. The first universal examination took place in six places in 1863, at which a total of 126 candidates attended. Last December the fifteenth examination was held at 76 places; the aggregate number of candidates was 2,379, Last year 30 per cent. of the whole number of candidates which attended these university local examinations were girls. The Oxford system has afforded curious evidence as to the comparative intelligence and working power of boys and girls—on the whole in favor of the former. The boys excel, as might be expected, in their own special subjects of Latin and Mathematics, but the girls in modern languages and other subjects.

The next natural movement was to obtain the advantage of university education for women. As an experiment Girton College was opened, and subsequently Newnham Hall. Both are close to Cambridge. The former was modelled on the old University College basis, the latter on a more flexible and modern plan. Girton followed the method and studies of the University—had the same curriculum, within the same limit of time, and its students were admitted to examination on the same conditions as the ordinary undergraduates. The result has proved beyond a doubt the controverted fact of woman's capacity for such mental labor as young men of the same age are expected to undertake, and the success of Miss Scott, in obtaining the high position of eighth wrangler in the recent Cambridge Mathematical Tripos has demonstrated the fact that, other things being equal, women are able to carry off some of the highest honors of the University. In the report of this examination it is stated that if women were not excluded from academic honors, three other ladies would have come out in the third class. It is further stated that some of the female students from Newnham, who were informally examined last autumn, were similarly successful. One lady got a first class place in the Moral Science Tripos, and two others a like position in the Historical Tripos.

The success of Girton and Newnham had its influence on Oxford, and two Halls for women were subsequently established there. This was followed by the opening of the London University degrees to women. At this point Lady Stanley of Alderley remarks :—

"It can scarcely be doubted that the earnest, thorough work done by the College, the admirable spirit and tone among the students, and the success achieved in passing the successive years, some of the most difficult examinations, have combined powerfully with the determined energy of the medical students to create that change in public opinion which made the action of the London University possible, and which reduced to mere questions of time any other measures that may yet be needed to open a full and free career of employment to women."

In order to supply the yet "missing link" in higher female education, a "National Union for the improvement of women's higher education" was formed. In 1871 a committee was formed to carry out the various schemes of this society. The Princess Louise consented to be its President. The special object of the Union was to establish good and cheap schools for girls, above those attending the public schools, to provide means of training female teachers, and to promote higher education for those after school age. Complete success has crowned the efforts of the Union. In 1872 the "Girls' Public Day School Company" was formed. The first school was opened in 1873. Now there are seventeen large and successful schools in operation, with an attendance of about 3,000 girls. It is expected that soon there will be a school of this kind in nearly every town in England. Those established are periodically inspected (as this is their life). Examinations are held by the Universities' Board, and a good number of pupils have passed with credit the Oxford and Cambridge local examinations.

The last step taken was to establish a medical school in 1874 for women. Arrangements were made for instruction to be given to the students in the wards of the Royal Free Hospital. Nineteen British and two Irish medical examining bodies are now enabled to confer licenses or medical degrees upon women.

Thus we see that in every department of female education satisfactory provision has been made in England for it.

CHANGES OF TEXT-BOOKS IN NOVA SCOTIA.

We learn from the last Annual Report of Rev. Dr. Allison, Chief Superintendent of Nova Scotia, that the Council of Public Instruction for that Province has been giving a large amount of careful attention to the subject of school text-books, during the past year. The fundamental principle adopted by the Council was that only one text-book should be authorized for each subject. The list is not yet fully completed, except the Mathematics and Science. In these departments, the Ontario text-books by Hamblin Smith and Kirkland and Scott have been authorized for exclusive use after October. Dr. Allison and the Council of Public Instruction are to be congratulated on the success attending their labors. They have not only secured an admirable set of text-books in the subjects mentioned, but their course has received the hearty endorsation of the teaching profession throughout the Province, as may be learned from the very practical reports from the Inspectors, which form a large and valuable appendix to the Chief Superintendent's Report.

The Rev. Dr. Allison refers to the subject as follows in his Report :—

"In my Report of last year I mentioned, as grounds upon which the necessity of a revision rested, 'the necessary multiplication of books in some branches of knowledge, the total lack of prescribed texts in others, and the admitted unsuitability of some of the authorized works.' During the year, the subject has received much painstaking consideration from the Council of Public Instruction. In some subjects, definite results are yet to be announced. In Mathematics and Science a simple and comprehensive list of texts has been prescribed, authorized for use immediately, and required to be used after the close of the current year in October. While I regret any inconvenience and expense entailed by this revision, I am convinced that, on the whole, great economic as well as educational gain will result therefrom."

We wish the Council of Public Instruction and Dr. Allison success in dealing with the other subjects of the school programme.

RECENT GEOGRAPHICAL NOTES.

ARCTIC EXPLORATION OF THE NORTH EAST PASSAGE.

Although arctic exploration in the direction of the north west passage has been a favorite yet comparatively fruitless enterprise for many years, it was not until last year that a successful exploration of the north east passage to Asia was made. Explorations in this direction had for three centuries proved abortive, so that the first successful one was made by the Swedish ship *Vega*, under the command of the energetic explorer, Prof. Nordenskiold. He completed the memorable voyage during the months of July, August and September of last year—a voyage which Capt. Markham says will always rank as one of the greatest geographical feats of the present century. The commander of the *Vega*, after careful study of currents and the movements of ice in these seas, and two test voyages in 1875 and 1876, at length succeeded in making the famous passage from the Atlantic to the Pacific Ocean around the Northern part of Europe. He also succeeded in opening up the Siberian coast and rivers to civilization and commerce. On the 5th of August last Prof. Nordenskiold reached the mouth of the Yenisei river, and on the 19th of the same month the first keel (as Capt. Markham says) made by human hands cleft the sea round the most northern point of the old world." This was Cape Chelyuskin—the *Promontorium Topin* of Pliny—found to be in North latitude 77° 41'.

Another notable voyage in this direction was made last year by the Dutch schooner *Willem Barents*—so designated in honor of the Dutch navigator of that name in 1594. This schooner succeeded in reaching the hitherto inaccessible shores of Franz Josef Land, lying three degrees north of Novaya Zemlya (or Nova Zembla). The only other vessel which approached the inhospitable coast was the Austro-Hungarian exploring ship *Tegetthoff*, which drifted there in the ice in 1872-3, in which she was hopelessly beset, and from which she was never extricated, but had to be abandoned by her heroic crew. The geographical importance of this feat of the *Willem Barents* cannot be too highly estimated, as it has disposed of many knotty points in North Eastern Arctic Navigation. It is expected that it will greatly facilitate the scientific exploration of the polar sea and area, and thus solve many doubts and surmises of navigators in arctic waters.

As it may be interesting to our readers to know something of the prospects of exploration in this new field, we shall devote the next geographical paper to this subject.

SPELLING REFORM.—Dr. J. A. H. Murray, President of the Philological Society, writing to a member of the English Spelling Reform Association, says :—" As to practical measures, I strongly approve of gradual steps. If spelling reformers will agree on a list of immediate changes, and pledge themselves to use them *whenever they can*, I will join them in doing so. If some hundreds of men will do this, it cannot be laughed down. I would have a list drawn up of words on which there would be a general agreement, excluding for the present *all* doubtful words, but including all those like *hav, giv, catalog, tung, det, dout, coud, soverin, lovd, prest, deckt*, whose superfluous letters are both *unphonetic* and *unhistoric*, in order to make a beginning, and in fact to make the matter a practical one, so that people would be forced to say, 'Some people spell this word so and so : I think theirs is a better way.' "

—We copy the following statistics relating to the schools of England and Wales from the *Schoolmaster* :

The grants for day schools amounted to £1,999,929 5s. 3d., an increase on the previous year of £138,231 15s. 4d. ; for evening schools, £22,540 13s. 1d., a decrease of £1,585 6s. 11d. ; payment of Honours' fees, £7,521 19s. 11d., an increase of £4,888 7s. : grants to School Boards, £1,070 10s. 8d., an increase of £258 0s. 4d. ; grants towards building and furnishing school premises, £3,053 14s., a decrease of £986 16s. 3d. ; grants to training colleges, £105,441 0s. 11d., an increase of £1,900 2s. 10d. ; pensions to teachers, £4,736 14s. 3d., an increase of £2,117 13s. 7d. ; administration, £179,403 13s. 5d., an increase of £6,939 3s. 2d. ; organisation of districts, etc., £300 13s. 10d., a decrease of £204 0s. 3d. The total is £2,323,998 5s. 4d., and the increase as compared with the previous year £151,568 18s. 10d. Classified according to denomination of the recipients, the following is the result : —Schools connected with the Church of England, £1,178,281 17s. 9d., an increase of £44,866 13s. 6d. ; British, undenominational, and other schools, £208,391 10s., an increase of £6,025 1s. 4d. ; Wesleyan schools, £106,086 1s. 10d., an increase of £4,402 7s. 4d. ; Roman Catholic schools, £112,276 3s. 8d., an increase of £2,780 13s. 11d. ; Board schools, £538,067 14s. 2d., an increase of £86,500 19s. 6d. The number of certificated teachers actually engaged in teaching was 30,128 ; assistant teachers employed under Article 79 of the Code, 6,615 ; assistant mistresses, 2,124 ; pupil teachers under apprenticeship, 30,473. The salaries of 124 masters principally in Church schools were under £50 per year, and 137, of whom 49 were Board, and the rest Voluntary, received over £300. The number of schools inspected by Her Majesty's Inspectors was 17,166, in which accommodation was provided for 4,142,224. The number on the registers was 3,710,883, of whom 3,122,672 were present on the day of inspection. The average attendance was 2,594,995. The total expenditure of schools for the complete year was £4,773,824. The expenditure per scholar in average attendance in schools connected with the National Society or the Church of England was £1 14s. 7¾d. ; in Wesleyan schools, £1 14s. 5¾d. per head ; and in School Board schools, £2 2s. 0¾d. per head, or an average on all schools of £1 16s. 5d. The amount received from school pence was no less than £1,349,297 paid by scholars and £23,066 paid by guardians. Of 1,760,040 scholars presented for examination in Standards 1 to 6 inclusive, 968,881 were in schools connected with the National Society and the Church of England, and 446,310 in Board schools. The percentages of passes in reading were—in National schools, 87·03 ; in Wesleyan, 88·1 ; in Roman Catholic, 89·74 ; in British, 88·56 ; and in Board, 87·66. In writing the percentages were for the same—78·81, 80·72, 81·36, 80·88. and 82·13 ; and in arithmetic—71·98, 75·69, 73·76, 75·7, and 77·4.

—The following information relative to teachers' salaries in Scotland will prove interesting. It will be necessary to remember that most masters have residences as well :

	Rate of Grant.	Rate of Expenditure	Average salary—Masters.	Mistresses.
Public Schools	£0 17 1½	£2 3 6½	£137 17 1	£70 5 1
Church of Scotland do	0 17 7¼	2 1 11½	164 17 1	84 14 0
Free Church do	0 16 1	2 1 1¾	141 0 11	77 18 7
Episcopal Church do	0 14 9¼	1 13 3	127 12 11	70 4 4
Roman Catholic do	0 15 0¼	1 11 11½	133 18 3	78 11 4
Other do.	0 16 11¾	2 1 2¾	144 6 4	75 4 10
Net Average	£0 16 11	£2 2 1¾	£139 3 0	£72 6 4

—It is understood that the Hon. Adam Crooks, Minister of Education, has left for England to secure a Professor for the

vacant chair of Classics in Toronto University. Great credit is due to the Minister for the good service already done in securing for the University Professors Wright and Loudon, who have proved themselves well qualified for the high position in which they have been placed. It is to be hoped that he will be equally successful in the choice he is now about to make.

—The English educational journals strongly urge the teachers to take concerted action in relation to the elections about to take place. It is proposed to select a teachers' candidate, and a subscription is set on foot to raise £1,000 to pay the expenses of his election.

Contributions and Correspondence.

PUBLIC SCHOOL EDUCATION IN MANITOBA.

BY REV. W. CYPRIAN PINKHAM, CHIEF SUPERINTENDENT.

The system of public education which was inaugurated in 1871 is becoming year by year of greater value to the country. Considering all that the Province has suffered from the repeated grasshopper visitations, and the difficulty of obtaining funds from a population, many of whom found the resources at their disposal for establishing themselves in a new country very limited indeed, it is really surprising that the organization and support of schools should have received such a large share of attention, and that the educationists in Ontario should be able to say of a system which has been scarcely nine years in operation: "So far as public school education is concerned, the residents of Manitoba can obtain in the towns and villages, and in many of the rural districts, quite as good advantages for their children as in many of the older provinces." It is a most gratifying fact that, as soon as they become established in their prairie homes, our settlers almost invariably set about the organization of school districts and the establishment of schools, and the result is that schools are now in operation in townships which two or three years ago were without a settler, and much of the land in which is still wild. Visitors to the capital of the Province are struck with the imposing appearance which our school buildings make, and to the credit of the city trustees it must be said that they are leaving no means untried for securing the utmost efficiency in the various schools under their jurisdiction.

The body entrusted with the administration of the Public School Act is the Board of Education. The Board consists of twenty-one members appointed by the Lieut.-Governor-in-Council, viz.: twelve Protestants and nine Roman Catholics. The appointments are for three years, provision being made for the retirement of seven members each year, who, however, are eligible for reappointment. The Board is empowered to resolve itself into two sections, consisting of the Protestant and Roman Catholic members respectively. Each section has one of its members for its executive officer, with the title of Superintendent. It has the entire management of all the schools of its denomination throughout the Province. It makes all necessary arrangements for the grading and licensing of its teachers, and for the withdrawal of the licence upon sufficient cause. It selects all books, maps, etc., to be used under its jurisdiction, and has power to appoint inspectors, to define their duties and provide for their remuneration. The organization of school districts and the opening of schools rests practically with the people directly interested. The Board of Education has invariably given the utmost encouragement to settlers desirous of establishing schools, and information as to the steps to be taken can at all times be obtained from the Superintendent. After the formation of a school district the freeholders and householders meet at the call, by printed notice, of the Superintendent, for the purpose of electing three trustees, who thus become the guardians of the educational interests of the district—to appoint auditors, and to vote the sum of money to be raised by assessment on all the real and personal property in the district to supplement the Government grant. This grant amounts now to a little over one hundred dollars per annum to each school carried on for the full twelve months. The meeting can, if it pleases, authorize the trustees to borrow a certain amount of money for the erection of a school house, etc. At the annual meeting, which takes place on the first Monday in February in all the school districts in the Province, the trustee whose term of office has expired retires, and there is a new election to fill his place; the retiring trustee is eligible for re-election. After the first meeting, ratepayers only, *i. e.*, persons residing in the district and who have paid their school tax for the previous year, are entitled to take part in the proceedings or to be elected as trustees. If such meeting refuse to vote a sum of money to carry on the school, no school can be opened that year, unless a motion to raise money be adopted at a subsequent meeting. The powers and duties of trustees are clearly defined by statute. The Protestant section of the Board of Education, in its programme of examination for teachers, adopted a pretty high standard. Its examiners are professional men of high standing in the province, almost all of whom have been at some time or other engaged in teaching. Its teachers bear excellent moral characters, have as a rule a high sense of duty, and seem most anxious to come up to the standard which our modern ideas require in the profession.

At the present time there are nearly 120 Protestant school districts in the Province, and this number will in all probability be doubled within the next two years. The following summary shows the number of Protestant schools in operation each year since Confederation:—

Year.	No. of Schools.	Total Attendance.
1871	16	816
1872	17	1095
1873	17	1108
1874	22	1248
1875	26	1595
1876	30	1600
1877	38	2027
1878	50	2670
1879	100	

The experience of each year brings to light defects in our system, and discloses circumstances not as yet provided for; but as we look back over the past, we cannot help feeling grateful for the measure of success which has been granted to us.

HOW TO PRONOUNCE "MUSA."

To the Editor of the Canada School Journal.

This is not intended as a quaint title for an article on the pronunciation of Latin. Concerning the relative merits of the English and continental methods I offer no opinion. My purpose is simply to discuss the pronunciation of *the ablative singular* of an ordinary noun or adjective *in the First Declension.*

Throughout the Maritime Provinces, so far as my observation has extended, the English mode of pronunciation generally prevails; and to this mode my remarks have reference. It has come to my knowledge in various ways, during the past fifteen years, that many teachers of Latin, including College Professors, have been in the habit of teaching or allowing students to pronounce the class of words mentioned in a manner that is entirely unwarranted and incorrect. While the nominative case is pronounced

by all alike—*musă, togă, stellă, Ossă*, etc.—the ablative case is called *musay, togay, stellay, Ossay*, etc.

When asked why this difference is made between the two cases, these teachers invariably say "Because the final *a* is *long* in the one case but *short* in the other." That there is a mistake here will be evident from the following considerations:

1. The one *a* is long and the other is short in "quantity," not in sound. The *quantity* of a syllable is said to be "the relative time occupied in pronouncing it." In our modern speech, at least in English, accent has taken the place of quantity. The so-called "long" and "short" *sounds* of the English vowels have no direct relation to the long and short quantities in Latin.

2. If vowels that are long in quantity are necessarily to receive the long sound, then *regnīs* must be pronounced "reg-nīce," and *ĕdax* must be made to rhyme with "head-aches."

3. The rules for the pronunciation of such a word as *musâ* are clearly laid down in some grammars. Thus Andrews and Stoddard, a good authority, gives the following:

"(1) In words of two syllables, the penult is always accented; as *păʹter, penʹ-na.*

"(2) *A*, at the end of an unaccented syllable, has nearly the sound of *a* in *father* or in *ah*, but less distinct and prolonged; as *muʹ-sa, episʹ-tŏla*; pronounced *muʹ-zah*, etc."

4. It is quite unnecessary to give different sounds to the vowels in order to distinguish one case from another; otherwise let us make a distinction between the dative and ablative plural, and still more between the ending of the genitive singular in the Third Declension, and the dative or ablative plural in the Second.

5. Many persons never think of pronouncing the final *a* of the ablative singular, First Declension, like *ay* in *day*, except in declining a word, in which case they also misplace the accent and say—

mu-zahʹ instead of muʹ-zah.
mu-zeeʹ " " muʹ-zee.
mu-zamʹ " " muʹ-zam.
mu-zahʹ " " muʹ-zah.
mu-zayʹ " " muʹ-zah.

A New Brunswick Teacher.

To the Editor of the Canada School Journal.

Sir,—I have received a note from a teacher asking me how I would read the first verse of the first chapter of John, with the request that I would reply through the School Journal. "In the beginning was the *Word*, and the Word was *with Gòd*, and the Word *wàs* God." The common method of reading this passage is the right one, on the following analysis: 1st. Say *what* was in the beginning—the *Word*. 2nd. Say *where* it was, how associated —*with God*. 3rd. Say what that word *was—God*. 4th. Say (verse 2) *when* it was—in the *beginning*. This reading is supported by the authority of Rev. J. H. Howlett, Reading Chaplain of H. M. Chapel, Whitehall, and author of "Instructions on Reading the Liturgy;" and is in strict accordance with the commentaries of Barnes, Scott and others on the passage. The Evangelist first announces *what* was in the beginning, then that it was united *with* God, and as a climax of this great announcement that it *was* God himself. But lest his evangel in all its grand announcements should be misunderstood, he adds, in the second verse, that "the same was in the *beginning*." My correspondent states that he had been led to understand that he should emphasize "beginning" in the first verse, and emphasize "word" and not "was" in the third clause. But the emphatic statement of the second verse shows that John's first important announcement was that the *Word* was in the beginning, and that the Word not only was *with* God, but *was* God himself, crowns the statement. This is the general way of reading the verse, and it is based upon a common-sense view of the passage. I have marked it as it is and should be read.

R. Lewis.

WHAT MAKES THE ROWDIES.

To the Editor of the Canada School Journal.

On a scrap of paper which has served to wrap a mailed school periodical, my eye was caught by this paragraph:

"So long as we allow our public meetings, our lectures, our church gatherings, to be annoyed, disturbed, and made unendurable by hoots, whistles, cat-calls, and general rowdyism; so long as we allow our nights to be made hideous by gangs of young men racing and howling in our streets, so long may we expect our school will be disorderly and unsatisfactory. But when our city governments shall see that order prevails on our streets at night and day; when our churches and Sunday schools shall determine to have and enforce good order; when we can have a public lecture in either hall or church, at which there shall be no ruffianism; when, in short, our public will so respect themselves as to compel others to respect their rights; whenever and wherever this state of affairs exists, then and there can be had a good, successful, and orderly school, and genteel, orderly pupils will go trooping home quietly and without carrying off any one's gate. The best teachers in the world cannot do it without the co-operation of the people."

This is a frightful picture of a wretched state of society, in which expenditure and loss must ultimately eat up all means, and prosperity cannot be secured,—to say nothing of comfort.

But is it the rowdyism that spoils the usefulness of the schools, or was it ineffectiveness in the schools that first permitted or caused the development of the rowdies? For these are like the fungoid growths of blight and mildew which sometimes devastate the gardener's crops. If he has been vigilant and industrious to keep up a vigorous growth, the leaves of his vines remain bright and healthy; they throw off the spores from which the fungi grow. Is it not so in the schools? Children naturally love to learn, and to learn with others in emulative squads. If they get some fresh knowledge every day, of a kind that satisfies their desire, and leads them to anticipate the next point which is to be shown to them to-morrow, they will prefer the school to the street; especially if the room is bright and neat and comfortable. There will be no street school to go to, because none of the children will be idle or demoralized.

Instead of the *compulsion* which is a hard necessity in the case of the hopelessly depraved, let early measures of PREVENTION be put into immediate effect. Choose for the primary school the most winning, most steady, most tact-ful and expert of the whole corps of teachers; and let the next best be placed in charge of the next grade, and so on. Give a tithe of the cost of patrol and prosecutions, to supply these schools with all needful means and conveniences. Visit the busy little midgets, who will be delighted to see that their doings are noticed, and who will read to charm you, and do slate work to astonish you, if you only give them and their teachers countenance and chance. And so your future community will be saved from blight.

W.

Mathematical Department.

Communications intended for this part of the Journal should be on separate sheets, written on one side only, and properly paged to prevent mistakes They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

UNIVERSITY OF LONDON (ENG.).

Matriculation, January, 1880.

ARITHMETIC AND ALGEBRA.

TIME—THREE HOURS.

Examiners—Dr. John Hopkinson, M.A., F.R.S., and Rev. Prof. Townsend, M.A., F.R.S.

1. From $\frac{10}{11}\frac{10}{14}$ of $\frac{1}{16}$ of $\frac{23}{240}$ of a mile subtract $\frac{35}{4}$ of $\frac{1}{28}$ of a foot, and express the result in metres. (One metre may be taken as $39\frac{3}{8}$ inches.)

2. Multiply 0·0316228 by itself, giving the result correctly to six significant figures.

3. Obtain the square root of 0·03456789 correctly to seven places of decimals.

4. Find the product of $0\cdot\dot{5}38461\dot{5}$ and $0\cdot3285714\dot{}$, reducing the result to a vulgar fraction expressed in its simplest form.

5. Given that a gallon of water weighs 10 lbs., that a cubic foot of water weighs 1000 ounces, and that a litre is a cubic decimetre; find how many litres there are in a gallon.

6. Find r and s in terms of a and b, p and q, so that $x^4+px^3+qx^2+rx+s$ may be divisible by x^2+ax+b, whatever x be.

7. Solve the simultaneous equations
$\frac{1}{5}x+y+7z=41$; $x+\frac{2}{5}y+7z=42$; $x+y+z=15$.

8. Reduce
$$\frac{x^4+a^2x^2+a^4}{x^2-a^2}\times\frac{x+a}{x^2+ax+a^2}\div\frac{x^2-ax+a^2}{x+a}-\frac{x^3-a^3}{x^3+a^3}\times\frac{x^2ax+a^2}{x-a}$$
$$\times\frac{x+a}{x^2+ax+a^2}$$ to its simplest form.

9. A milkman has three cans of 10, 7, and 4 quarts respectively; the first is full, the other two are empty: he is required to divide the ten quarts into five quarts in the ten-quart can and five quarts in the seven-quart can. How will he do it?

10. Three numbers are in geometrical progression: the sum of the first and third exceeds the double of the second by unity; and if from the difference of the first and third one be taken, the result is one-third of the second. What are the numbers?

11. A agrees to pay B a total sum of £300, in three instalments of £100, at the end of one, two, and three years respectively. He fails to make any payments, and at the end of four years B demands payment. Reckoning compound interest at 4 per cent., how much should B receive?

12. Assuming, for the purpose of this question, that a full-rigged ship has 40 hands, a schooner 15, and a steamer 10; on a certain day 36 vessels, all either ships, schooners or steamers, arrived in port; they had, in all, 750 hands; the hands on board the ships would be just numerous enough to man all the schooners and twice as many steamers as arrived that day. How many of the vessels were ships, schooners, and steamers, respectively?

SOLUTIONS.

1. 1 metre.

2. ·0010000. Use abridged method.

3. ·1859244. Shorten work by following rule: in finding the square root of a number, when $n+1$ figures of the root have been obtained, n more may be obtained by simply dividing the last remainder by the last trial divisor. Thus in the present example 7 figures are required. The first four, ·1859, are found by the ordinary process; and then the division of the remainder 90800..... by the trial-divisor 37182, will give correctly three other digits, 244. See Colenso's Algebra, Pt. II., § 16.

4. $\frac{2}{3}\frac{3}{0}$.

5. 1 gallon weighs 160 oz.; 1 cub. ft. weighs 1000 oz.; ∴ 1 gallon $=\frac{160}{1000}\times1728$ cub. inches. Also 1 litre $=\left(\frac{315}{80}\right)^3$ cubic inches, from

Ex. 1. Hence one gallon contains $\frac{160}{1000}\times1728\times\left(\frac{16}{63}\right)^3=4{\cdot}53$ litres nearly.

6. Let x^2+cx+d be the factor; the product $(n^2+ax+b)(x^2+cx+d)$ must therefore be *identically* equal to x^4+px^3+..... Multiplying out, and equating coefficients of x we have

$$q=b+d+ac$$
$$p=a+c$$
$$r=ad+bc$$
$$s=bd.$$

From first two $c=p-a$, $d=g-b-a(p-a)$. Substituting in third and fourth $r=a^3-a^2p+a(q-2b)+bp$, $s=ab(a-p)-b(b-q)$.

7. $x=7=z=5$.

8. $1-1=0$.

9. The simplest solution of the indeterminate equation $4x+7y=5$, is $x=3$, $y=-1$. Hence, evidently, if the milkman can succeed in filling the four-quart can three times, and, from the milk so put in, can manage to fill the seven-quart can once, he will have accomplished the required division; the method of doing this is sufficiently straightforward.

10. Let x, y, z be the numbers. Then $x+z=2y+1$, $z-x-1=\frac{2}{3}y$; also $xz=y^2$. From the first two equations $6x=4y$, and $3z=4y+3$; substituting these values of x and z in the third equation we get $y=6$; thence $x=4$, $z=9$.

11. Amount $=100\{(1.04)^3+(1.04)^2+(1.04)\}=£324.6454$.

12. Let x, y, z be the number of ships, schooners and steamers respectively. $x+y+z=36$, $40x+15y+10z=750$, $15y+20z=40x$. Whence $x=11$, $y=12$, $z=13$.

GEOMETRY.

TIME—THREE HOURS.

Examiners—Dr. J. Hopkinson, M.A., F.R.S., and Rev. Professor Townsend, M.A., F.R.S.

[Candidates are at liberty to use all intelligible abbreviations in writing out their answers.]

1. Two finite right lines, of any lengths, being supposed to radiate, in any directions, from a common terminal point; show that the angle they determine is equal to that determined by their two productions through the point.

2. Two rectilinear segments, of any lengths, being supposed to have a common middle point, but not a common direction; show, assuming the preceding property, that they are the two diagonals of a parallelogram.

3. Two triangles, having a common base, being supposed to have their two vertices on a common parallel to the base; show that the four parallelograms, on the same base, having their four sides for diagonals, are equal in area.

4. By aid of the preceding, or otherwise, construct, on a given base, a triangle of given area, having its vertex on a given indefinite right line not parallel to the base; and determine the number of solutions.

5. Two chords of a circle, intersecting at a point within the circumference, being supposed to make equal angles with the line connecting the point with the centre; show that the two segments of either are equal to the two segments of the other.

6. By aid of the preceding, or otherwise, construct an isosceles triangle of given vertical angle, having its vertex at a given point within a given circle, and both extremities of its base on the circumference of the circle; determine also the number of solutions.

7. A quadrilateral, of the ordinary form, being supposed inscribed in a circle; show that the sum of either pair of its opposite angles is equal to the sum of the other pair.

8. The quadrilateral, in the preceding property, being supposed to be a parallelogram; show, as a consequence from the property, or otherwise, that its two diagonals pass through the centre of the circle.

9. A quadrilateral, of the ordinary form, being supposed circumscribed about a circle, show that the sum of either pair of its opposite sides is equal to the sum of the other pair.

10. The quadrilateral, in the preceding property, being supposed to be a parallelogram; show, as a consequence, from the property, or otherwise, that its two diagonals pass through the centre of the circle.

11. Divide a given finite right line into two unequal segments, so that the rectangle contained by the whole line and the lesser segment shall be equal to the square of the greater segment.

12. By aid of the preceding or otherwise, construct, on a given base, an isosceles triangle, each of whose base angles shall be double of its vertical angle; and complete, by aid of it, the construction of a regular pentagon on the base.

[Examiners in Canada would do well to mark the custom indicated by the note at the commencement of this paper. The custom of varying the wording of familiar propositions is also an excellent one; the examiner has then some assurance that candidates will not recognize the propositions merely by the jingle of words.]

SOLUTIONS.

1. Prop. 15, Bk. I., Euclid.

2. Joining the extremities of the line, we find we are asked to prove the converse of the problem,—the diagonals of a parallelogram bisect each other.

3. Establish Prop. 35, Bk. I., Euclid, under which the problem is an example.

4. From the preceding it follows that triangles on the same base and between the same parallels are equal. On both sides the given base let there be triangles of the given area. Through their vertices draw lines parallel to the base; the points where they intersect the given line, when joined to the base, will give the triangles required, two in number.

5. If A be the given point, and O the centre of the circle, and OB, OC be perpendicular to the chords, it may readily be shewn that AB and BO are equal to AC and CO. Hence the chords, being at equal distances from the centre, are equal; also $AB=AC$, whence, &c.

6. Join the given point to the centre, and on each side of the joining line make angles equal to half the given angle. Two solutions.

7. In effect Prop. 22, Bk. III., Euclid.

8. The angles are readily shewn to be right angles, and thence all segments of diagonals are equal; hence point of intersection must be the centre.

9. Readily follows from fact that tangents from same point to same circle are equal.

10. It follows from preceding problem that such a parallelogram must be a rhombus. Hence a diameter bisects the angle between two tangents to the circle, and therefore passes through the centre.

11. Prop. 11, Bk. II., Euclid.

12. With the ordinary figure and lettering of Prop. 11, Bk. II., Euclid, CA being the given line, the proposition enables us to produce it to F, so that CF, $FA=CA^2$. Accordingly on the given base CA construct an isosceles triangle with sides equal to CF, and employ the proof of Prop. 10, Bk. IV. Prop. 11, Bk. IV., enables us to construct the pentagon.

Solutions of the following are asked for:

1. $\sqrt[3]{a+x}+\sqrt[3]{a}-x=b.$

C. E. K.

2. $x^2+\sqrt{(x)}=a.$

3.
$$\begin{cases} x^2-yz=a^2. \\ y^2-xz=b^2. \\ z^2-xy=c^2. \end{cases}$$

4.
$$\begin{cases} x^2+y=a. \\ y^2+x=b. \end{cases}$$

D. J. S.

5. A, B, C and D run a race over a mile course. First A and B race, and A beats B by 20 yards; next C and D race, and C beats D by 60 yards. Then A and C race; which will win, and by how much, supposing that D could beat B by 40 yards if they were to race?

S. H. P.

Teacher sends a solution of the "contract" problem solved in the February issue. In it he assumes that the boys and men determine the price of their labor not by the work they do, but by the amount the contractor receives, the former saying that they must get half as much as the contractor, and the latter twice as much. He obtains for answer \$5250. We prefer the solution that appeared last month, the interpretation there of the words of the problem appearing more natural.

W. J. Harrington, Emily, Victoria, sends the following solution of the "interest" question of last month:

Int. on \$10,000 for 6 months at 5 p. c. = \$250.

Int. on \$1 given 1st = int. on \$1 for 6 mos. = $2\frac{1}{2}$ cts.
" " 2nd = " " 5 " = $2\frac{1}{2}$ "
" " 3rd = " " 4 " = $1\frac{2}{3}$ "
" " 4th = " " 3 " = $1\frac{1}{4}$ "
" " 5th = " " 2 " = $\frac{5}{6}$ "
" " 6th = " " 1 " = $\frac{5}{12}$ "

Total given \$6.00 Int. = $8\frac{3}{4}$ cts.

Then to get \$1.00 monthly requires \$6.08$\frac{3}{4}$ at end of 6 months. Hence

\$6.08$\frac{3}{4}$ gives \$1.00 monthly.

$\therefore$ \$250 " $\frac{\$1.00}{\$6.08\frac{3}{4}}\times\$250$ monthly = \$41.067.

It will be observed the result is almost identical with our own, though the methods are quite different.

Mr. L. E. Newcomb, of Alma, N.B., has forwarded the following excellent solution of Problem 4, January issue:—If A, B, C be the centres of the circles whose radii are 100, 20, 40, respectively, the locus of the centres of circles touching the circles at B and C will be an hyperbola, whose foci are B and C, transverse axis $a=\frac{1}{2}(40-20)$, distance of foci from centre of curve $ae=\frac{1}{2}(240)$ and conjugate axis $b=\sqrt{a^2e^2-a^2}$. Hence its equation referred to B as focus and BC as initial line will be

$$r=\frac{b^2}{a+ae\cos\theta}$$

Similarly the equation to the locus of centres of circles touching those at A and B will be

$$r'=\frac{b'^2}{a'+a'e'\cos\theta'}$$

The centre of the required circle will be the intersection of these curves, at which point $r=r'$ and $\theta+\theta'=ABC$. From these equations r is found, and thence the diameter of the required circle, which Mr. Newcomb finds to be 254.778 ft.

Mr. Park sends the following answers to his problems in last number: (1) S. Lat. 46° 48′, Long. = 160° 29′ 30″. (2) Rt. Ascen. = 49° 19′, Dec. = 15° 59′ 30″. (3) Obliquity of ecleptic = 23° 28′, Long. = 73° 55′. (4) Dis. bet. centres = 112° 53′ 30″.

ANSWERS TO CORRESPONDENTS.

YOUNG TEACHER.—A so-called Arithmetical solution, if found, will be an Algebraic one disguised. In reference to your second question: From the ends of the 275 side drop perpendiculars y, y on the 385 side, and let x be one of the segments of this side between its end and the foot of y; then $110-x$ is the other. Hence $x^2+y^2=(155)^2$, $(110-x)^2+y^2=(125)^2$. Eliminating y^2 we have a quadratic to determine x. Thence y is found.

T. R. B.—The solution of your problem will be obtained by remembering that the line joining the bisections of the sides of a triangle is parallel to the base.

M. W.—Denote the first number briefly by $1abcde$, and therefore the second by $abcde1$. Then

$$\begin{array}{r} 1abcde \\ \underline{\qquad\quad 1} \\ abcde1 \end{array}$$

It will be observed that when the nine digits are multiplied by 3, each gives a different digit in the units place. Hence e must be 7. 2 is carried, and therefore d multiplied by 3 gives 5 in the units place, and d must be 5. Similarly the other digits may be obtained. (Prob. 61, page 163, H. Smith's Algebra.)

J. T. H.—The solution of your problem will be found in our issue of November, 1879. The condition is that the opposite angles of the quadrilateral shall be together equal to two right angles.

D. J. S.—The character of the problem seems to forbid what you call an arithmetical solution. However, such enquiries are extremely unprofitable. The object of employing an elementary method should be in the main to simplify a process; here it would certainly complicate it. We would prefer spending our time in solving "14, 13, 15."

In the first question you propose you say "Examination Papers," without indicating which you mean. Please send the problem.

Practical Department.

ELOCUTIONARY STUDIES.

BY RICHARD LEWIS, PROFESSOR OF ELOCUTION, TORONTO.

The study of a composition for oral delivery demands intellectual and physical qualifications. The first involves a thorough comprehension of every thought in the passage, and a vivid and true conception of the spirit and character of the entire subject. The second demands a trained voice and ear. It is essentially and exclusively physical, and without its functions the highest development of the first qualification will fail in making the voice the interpreter of thought and passion. The common mistake that teachers and authors make in their views on the subject is that if you understand what you read you can read it well; and the fact that university educated men, with the highest learned titles, are often the very worst readers and speakers, ought to silence the false doctrine for ever. The trained voice and ear are indispensable, and though all human beings are amply gifted with these physical qualifications in infancy, the utter absence of training in education and the influence of surrounding bad habits, make the acquisition of skill and excellence in this department most difficult. Inexperienced teachers supply fanciful theories in abundance. They lay down rules for expression; but the rules are worthless, are unintelligible when the pupil has no control over the voice, nor ear to distinguish its modulations. If the pupils of our schools never received a single rule for reading, vocal drill would accomplish almost all that was necessary when guided and pervaded by common sense and the exercise of imagination.

As I purpose submitting a series of papers as aids to elocutionary study, I therefore urge on my readers the immense importance of this voice and ear culture. Much of what I advance *must* be theory. I cannot give the vocal example in a printed article. But when the student has full mastery over the organs or delivery, then the elocutionary study is edifying, entertaining, and delightful. Then intellect and imagination can guide and govern and exalt expression, and make uttered speech represent artist, poet, and historian, realizing, interpreting, and in very truth creating in life-like forms of power and beauty, what mind has conceived and garbed in silent words.

I select for our first study *Parrhasius*, because it is essentially dramatic, picturesque, and imaginative, and, being in the Fifth Reader, available in our schools.* The opening scenes are admirably and dramatically depicted. The reader with a very slight effort of imagination can conceive and realize to himself the "gray-haired captive chained to a pillar;" his weariness and silent grief, the insolence and scorn of heartless spectators. This must be realized to the mind and read in tones modulated in harmony with each picture as it rises in the mental vision and pervaded by the spirit which sympathises with suffering and hates injustice. Yet in the mere narrative there must be the dramatic power. The very spirit with which the "Jew taunted him," "the buyers struck him," and "the soldiers smote him with threats of torture," must be conveyed by tones of voice expressive of these actions, yet softened by glimpses of that sympathy with his wrong which pervades the poem and must therefore control the reading.

But I must pass these pictures and that of Parrhasius gazing upon his grief, animated only by an artistic sentiment and ambition. Let us stand at the side of the painter in his studio, and the description of his appearance prepares the way for the delivery of the first outbreak of passion.

* EXPLANATION OF MARKS.—Emphasise italicised words and give stronger emphasis to words in small capitals; (/) rising inflection; (\) falling inflection; (|) pause; (—) longer pause.

"His fine, earnest eye
Flâshed | with a passionate fire."

The words "His fine, earnest eye" must be read in animated tones growing in power and finding their climax on "flashed," which is the leading word, and will have a better effect if thrown out quick and powerfully and with falling inflection.

"The quick curl
Of his thin nostril and his quivering lip
Were | *like the wingèd* GÒD'S | breathing from his flight."

This passage must be read in the same animated style, and the simile, as it illustrates the "*quick* curl of his nostril" and the "*quivering* lip," although it is superior to and elevates the literal passage, can only be a *truthful* illustration by being read faster and with more vivacity than the literal. The *nature* and not the *value* of the simile suggests the law of its delivery.

Now impersonation commences. The reader must now assume all the dramatic qualities necessary to realize natural expression. He must endeavour to conceive all the conditions of the scene and the feelings of the speaker. A brief pause after the delivery of the narrative passage will give effect to the words of Parrhasius; and in that pause the reader must endeavour to *be* the painter and give the command with "the quick curl of his nostril and quivering lip." Yet self-possession must never be forgotten. The reader becomes an actor, and the true actor under the most powerful feelings never forgets *himself*. He is at once the actor and the creation of the poet. Here then, while animated by the passionate fire of ambition, he reflects that he is in the presence of slaves, and must sustain the dignity of the master. Hence the fire is rather in his eye and countenance quivering with expressive emotion than in the voice. He affects a momentary calmness; but gradually the voice swells with fervid, but not loud and noisy, excitement as he finishes the first stanza.

"Bring me the CÀPTIVE—*nòw*,
My hand feels *skilful* and the shadows | *lift*
From my waked spirit | airily and *swift*;
And I could paint the BÒW (*suppressed excitement*)
Upon the bended *heâvens*; around me pláy |
Colórs of such DIVÌNITY | to-day."

Há! bind him on his *bâck*!"

This command is not given boisterously, but with the calmness that an anatomist would give his instructions when a subject for dissection was brought before him, and the outstretched arm descending and the hand prone would complete the picture. But the calmness passes into excitement, as the victim probably struggles, and the one overmastering desire to depict extreme agony under torture gives suppressed energy to the hurried commands that follow.

"*Loòk!* as Prometheus in my *pìcture* here?"

A momentary glance at the picture, supposed to be opposite to the painter and the attendants, and the hand rapidly uplifted, and the index finger hurriedly pointed towards the picture would be the appropriate action.

"*Quick!* or he *faints!* stand with the *cordial*
nèar."

Each of the italicised words must be uttered rapidly with the expulsive oratorical stress and "cordial" slightly prolonged.

"Now *bend* him to the *ràck!*
Press down the poisoned links into his flesh,
And *tear* AGAPE | that healing wound afresh!"

Each of these commands is given with utter absence of feeling, pity or anger. It is the calmness of a cruelty of which the painter must be supposed to be utterly unconscious. Yet the suppressed energy of the impersonation should fill the hearer with horror, which becomes almost intolerable on the word "agape."

In the next stanza the painter is rapidly sketching the agonies of his victim, and carried away by enthusiasm for art and the

splendid results of his experiment, the tones of the speaker grow into wild fervor.

"Sò! let him *wrìthe!* (*calmly uttered as if quite satisfied*). "How long will he *livè* | thus?" *Quick* my good pencil, now! WHAT a fine *agóny* | works upon his brow!

"*Há!* gray-haired and so stróng!"

This line is equivalent to a question, "Art thou so strong?"

"How *feàrfully* he stifles | that short moan."

This line is spoken low, the syllable "fear" being prolonged with tremulous stress. This delivery will prepare the hearer for the effect of the last line.

"*Gods!* if I could but *pàint* a *dying groan!*"

Intense passion must mark the delivery of this line. "*Gods*" is uttered with startling effect, with the eyes and the right hand uplifted heavenwards. The emphasis on the succeeding words is difficult, and demands care. His ambition is not simply to "paint;" he can do that, but to paint a *dying groan*, and while the mechanical effort of giving adequate power to the voice is indispensable, it will only be mechanical if the reader fails in adequate conception. The true reader must possess and exercise the faculty of the poet and the painter. He must conceive by the strongest effort of his imagination the conditions of the event and the character, and he must depict them.

"Pity thée?"

The victim is here supposed to have implored "pity," and the painter may be supposed to repeat the words either as an interrogative, as if he *did* feel momentary pity, or in mere mockery of the appeal. The last sentiment would be best expressed by a falling inflection, as "*Pity* thèè," and the first by a rising inflection.

"So I *dò;*

"I *pity* | the dumb victim at the *àltar.*"

This is uttered with a touch of softness in the voice; but in the next three lines intensity of voice and passion must mark the reading, the voice swelling in force with the excitement of ambition expressed in the last line:

I'd *rácк* thée, though I knew |
A *thousànd* livès | were perishing in thinè;
What were *tèn thousànd* | to a FAME like mine | like mine?

The three succeeding stanzas present no special difficulties except at the beginning of the first and the close of the last. The victim is supposed to utter "hereafter," and the painter repeats it as a question, slowly delivered, as if for a moment pondering its dread import. Then defiance.

"Ay *hereàfter.*"

In the last passage of the third stanza the voice again swells into force with excited passion rising to a climax of supreme defiance of all consequences, the face turned upward and the extended arm thrown out and heavenward on the last line.

"And though the crown of flame
Consumed my brain to *ashes*, as it won me,
By all the fiery *stárs*—I'd *plùck* it *òn* me!"

In the next stanza passion must still burn vividly. In the expression, "My heart's last fount," there is a mingled feeling of tenderness and resolute cruelty. The appropriate action would be to press the heart with the right hand; and on the word "throat," where the conflict of these feelings is strongest, the right hand slightly grasping the throat, as if with a choking sensation, would indicate the mental agony, expressed with fiercer energy on the last line.

"*All!* I would do it *àll*
Sooner than *dié* like a *wórm* to *rót!*
Thrust foully into earth | to be *fórgot!*"

These last two lines end with a rising inflection, not on any fanciful theories of "psychological negatives," but simply because they are antithetical to the resolute *will* expressed in the previous line. Then a momentary pause must separate the passages from the lines that follow. The painter has been carried away from all around him, wrapt in the conceptions of his wild dream of ambition. But the agonies of the dying victim awaken momentary pity as he turns to watch him. The pity passes into inhuman and selfish anger, and the "Ha!" is uttered with aspirated emphasis, rising to its height on the words

"RACK him | till he revives."

But again the solemnity of death awes even his cruel nature, and the conflict of varied feeling in the next stanza demands the highest dramatic conception and effort.

"Váin, váin, give o'er."

These words are exclamatory, and therefore take the rising intonation; the second "vain" also spoken a little lower than the first, and the whole line delivered in subdued tones, as the presence of death naturally suggests. But again, that agony bursting forth in "death dews on his brow," re-awakens ambition and banishes mercy.

"Stand back" is uttered hurriedly but not loudly, and the succeeding words are to be given in tones of suppressed force and excitement.

"I'll paint the *death-dèw* on his *bròw!*
Góds! if he do not díe |
But for one *mòment*—ÒNE—till I eclipse
Concèption | with the *scorn* of those calm *lips!*"

In the Fifth Reader the editor has italicised the *first* "one" for emphasis. But the poet understood his business better than the compiler, for he repeats the word "one," indicating in that construction that "moment" which doubtless means a space of several moments is the first wish of the painter, and then he asks for "one," but "*one*" moment. The last stanza must be read slowly and solemnly, for the dying victim is *now* the master. His sublime fortitude is grander than the conceptions of the Painter, and Genius perverted by ambition does homage to Death and Immortality, which it affected to despise.

Every word, especially the emphasised words, of this stanza, must be delivered with subdued force and tremor of voice. The Mortal stands before the Immortal, and whispers in breathless expressions the solemn events before him.

Shivering! *Hark!* (*watching intently*) he *mùtters*
Brokenly nów; *that* was a difficult breath; (*very low*)
Anothér? Wilt thou *nevér* come,—oh *Déath!*
Lòok! how his temple flùtters!
Is his heart *still?* (pause) lift up his *hèad!* (*low and gentle*)
He *shuddèrs*—(tremulous) *gasps*—(*b eathless*) *Jove*
help him—só | he's | *dead!*" (*very deep*)

The voice scarcely rises above a whisper in this passage; the pauses are long, and the last word, "dead," must be prolonged, for it is not an expression of relief that the agony is past, but of solemn awe.

I give the concluding passage which, very unaccountably, has been omitted in the Fifth Reader—in full. In its delivery the reader becomes the commentator and preacher, and he assumes the dignity of the orator and the sterness of the moralist:

"How like a mounting *dèvil* | in the *heart* |
Rules | this unreined AMBITION! Let it once
But play the *monárch*, and its haughty brow
Glòws | with a *béauty* | that *bewilders* thóught
And unthrones peace | *forèver.* Putting on
The very *pomp* of *Lucifér*, it turns
The heart to *ashés*, and | with not a spring
Lèft | in the desert | for the spirit's *líp*,
We lóok | upon our *splèndor*, and forget
The *thirst* of which *we* PERISH" |

The terms *inflection*, *ēmphasis* and *pause*, require to be well understood, and I add to this study a brief explanation of such terms.

Inflection is always the most difficult function of the voice. It is not a sudden leap upwards or downwards, but a flowing of tone in the direction indicated, and varies in extent according to the nature of the thought. In the question "Did I say nĕw or ŏld?" everyone speaking naturally would give the rising inflection to *new* and the falling to *old*; and the extent of compass would probably be very slight, not beyond a third or fourth in music. But in the expression governed by great wonder, "Is this yŏu?" the last word would ascend to a fifth at least. Another point must also be carefully observed: whenever the inflection is extensive, the pitch of the voice must be changed. When the inflection is upward, the voice at the beginning must descend slower than in the utterance of the previous word; and when it has to descend, it must start higher than the previous word. If the student finds any difficulty in applying these rules, his voice and ear need culture, and the culture is simple and cannot fail to be attended with success. To acquire facility and correctness in inflection, let him *slur* up and down the gamut. A piano will help him, and a violin is a sure guide.

Emphasis. The emphasis is varied and is guided by the sentiment. In anger or terror it is often sharp and quick; in pathos and solemnity it swells towards the centre of the sound, and in great hatred it generally grows in intensity towards the final part. But in every case it demands a *change of pitch*, lower if the inflection rises, and higher if it descends.

"All—I would do it *all.*"

Here the voice pauses a moment before the final "all," and rising higher—which does not mean louder—than on "it," it then descends on the word "all."

Pause. No rule can be given for the length of a pause. Its time depends entirely on the state of mind which governs the speaker. The thoughtful reader, however, makes the very pause eloquent and impassioned, when justified by the event. Thus in the stanza beginning with "shivering," the pauses must be long between each exclamation and sentence. But every pause is full of meaning and power. He is watching the dying victim, and the look is one of intent earnestness, awe, and probably remorse or pity, all of which, without any guidance from rules, the reader will manifest if he conceives truly and fervidly the scene and the character he represents.

METHODS OF TEACHING.

FROM THE ANNUAL REPORT OF INSPECTOR SMITH, OF HAMILTON

Aptitude to teach and the ability to govern properly are two essential requisites for successful teaching. It is a commonly received opinion that the acquisition of knowledge is the great aim of education, but this appears to me to be a secondary consideration. It is true that it is impossible to discipline the mind properly without imparting knowledge, but the great object to be attained is the growth and development of the mind and the formation of correct habits of life. In other words, instruction is the means and education the end. To secure these desirable results, it is of the greatest importance to have teachers who are not only conversant with the subject to be taught, but who are thoroughly familiar with the most approved methods of instruction and discipline. I found the teachers in the higher grades discharging their duties in a very satisfactory manner and exhibiting a great deal of skill in the art of teaching. There seemed, however, a tendency on the part of some of them to do too much of the work and leave too little for the pupils. Particularly was this the case in teaching the literature of the reading lessons. Some were in the habit of writing a number of words with their meaning on the blackboard, these being copied by the pupils into note-books and committed to memory. It seems to me that it would be better to teach the pupils how to get at the sense of the passage read by giving a simple illustration of the meaning of any difficult word, allowing the pupil to use his own judgment in determining what the particular meaning of the word was in the passage under consideration, or by the judicious means of a dictionary. In the one case the pupils depend upon memorizing from note-books, while in the other the perceptive and reflective faculties are aroused and the memory retains ideas rather than mere words. There is a considerable amount of rote teaching in some of the lower grades, while in others the work is comparatively well done. I found in a number of instances that pupils were required to commit to memory the meanings of words which conveyed no idea to their minds. It was merely substituting one word that they did not understand for another equally unintelligible. In all the cases that came under my observation I pointed out the error to the teachers, and taught a class, to illustrate what to me seemed a better method. The really difficult part in teaching is to commence a subject properly, and it is in these lower forms that skilful and experienced teachers are required. This want we have strong reason to believe will be supplied by the training given in the County Model School. Of the methods of receiving answers from pupils while conducting oral recitations I found two in use. The one is known as the "Individual Method," in which the question is announced to the class, and all who think they can answer it rise to their feet or raise their hand. This possesses great advantages over every other method, and is less liable to be abused. It is, therefore, very desirable that it should be more generally adopted. The other is known as the "Concert Method." In this the question is announced to the class, and all answer in concert. Strong objections can be urged against the use of this method, since it has a tendency to produce a drawling sing-song manner of answering questions, that a few who know the lesson lead, while the rest simply follow without knowing the proper answer, and that often wrong words or phrases are used, which convey no idea at all, or else a very erroneous one. Considering the abuses that are likely to arise in connection with this method, and the strong objections that can be urged against it, I have discouraged the use of it as much as possible. In the hands of a judicious teacher it can be used with advantage in introducing a new subject or in preparing a lesson, but not in hearing one that has been prepared. In all such cases the individual method is preferable..

THE SCHOOL-ROOM.

OUTLINE FROM IOWA NORMAL INSTITUTE COURSE.

DIDACTICS.

The Philosophy of Education.

I. THE SUBJECT OF EDUCATION—*The Human Being in Childhood and Youth.*

- A. His educational susceptibility:
  - 1, a constitutional and fundamental quality; 2, the basis of all growth.
- B. This susceptibility considered:
  - 1, as to the body: *a*, its growth from infancy—how? *b*, its adaptability under training to all requirements; 2, as to his mind: *a*, its growth from infancy—how? *b*, in the individual, its adaptability, under education, to all requirements more limited; *c*, common characteristics of the race; *d*, special characteristics of the individual.
- C. Classes of mental faculties or of phenomena.
  - 1, the universal phenomena, consciousness; 2, attention: *a*, its importance the foundation of all intel-

lectual greatness; *b*, its relation to consciousness, including: (*a*), observation; (*b*), reflection; (*c*), memory, retention of cognitions; 3, how attention may be deepened; *a*, repetition—not of mere words, but of vivid views of ideas and thoughts coupled with language; *b*, reflection; *c*. association; 4, how secured: *a*, a fixed determination on the part of the teacher to have it; *b*, a clear knowledge of the lesson at ready command; *c*, a suitable interest excited concerning the subject taught; *d*, the eye free to view all and each in the class; *e*, the manifestation of earnestness; *f*, a simple manner and style; *g*, the removal of all obstacles.

D. The intellect:
1, the senses: *a*, enumeration of them and function of each; *b*, the information gained by them necessary and antecedent to all external knowledge; *c*, their systematic cultivation—object lessons; 2, memory; *a*, its nature; *b*, its importance for intellectual strength; *c*, its cultivation; 3, the reflective faculties: *a*, the synthetic process—generalization; *b*, the analytic process—reasoning.

E. The sensibilities:
1, the emotions: *a*, their nature; *b*, classification; 2, the affections: *a*, their nature; *b*, classification; 3, the desires: *a*, their nature; *b*, classification; 4, the will: *a*, the elements involved in the act of the will: (*a*), motive; (*b*), choice; (*c*), execution; *b*, the regulation and culture of the will; 3, value of strong will-power under the guidance of conscience and reason.

II. Discussion of what Education is.
A. It has special departments:
1, physical; 2, intellectual; 3, æsthetical; 4, moral.
B. It is a result consisting of:
1, development; 2, discipline; 3, strength; 4, skill.
C. It is a process consisting of:
1, teaching; 2, training.
D. Principles regulating teaching and training:
1, special principles—the intellect in particular; *a*, in childhood the perceptive powers are very active, so are comparison, memory, and the imagination; *b*, ideas of the outward world are obtained by perception; *c*, ideas thus obtained form the foundation of intellectual growth; *d*, a well-chosen system of object lessons (form, number, color, things, etc.) should form a part of primary instruction; *e*, language should not precede the evolution of ideas and thought, but accompany them; *f*, the mind has no pleasure in confused and indistinct impressions, and cannot be benefitted by them; *g*, every subject should be reduced to its elements and one thing taken at a time: proceed step by step; *h*, out of the known develop the unknown; *i*, order must be observed—first objects, then names; thoughts, then sentences; knowledge, then definitions; facts, then laws; phenomena, then principles; concrete ideas, then abstract; sometimes wholes, then parts; constituting synthesis. Hence the error of committing to memory definitions, rules, and formulæ, without their meaning having been discovered; *j*, memory is assisted by repetition, reflection, association, and action; *k*, each process of instruction should include full perception, distinct understanding, clear expression, and, when possible, the passing of thought into action; 2, general principles; *a*, education is based on the constitutional nature of the child, the peculiarities of each sex and of each child should be carefully studied; *b*, education pertains to the whole organism; *c*, the desire of children for muscular movement must not be repressed, but regulated; *d*, all education consists in doing and not doing, or exercise and inaction. What is desirable is improved by activity; tendencies to be repressed are kept dormant. This is the law of habit and experience; *e*, all activity should be pleasurable and varied; *f*, the child is not a passive recipient of external influences. The root of the work is in the scholar and not in the teacher; *g*, the teacher must have the voluntary and active co-operation of the pupil; *h*, the office of the teacher is to set the mental machine in motion; to bring forth the forces; to apply them in an efficient manner, in the right proportion and in the right order; *i*, all school doings and school sayings must be made pleasant; *j*, school government must not admit any despotic or cruel tendencies; *k*, example is more weighty than precept.

SCHOOL ECONOMY.

I. Organization.
A. Provisions relating to order:
1, the seating: *a*, the teacher has a right to seat the school in a manner that will promote the greatest good; *b*, suggestions as to plans of seating; 2, school evolutions: *a*, evolutions for the whole school; *b*, evolutions for classes; *c*, recitation tactics for each subject, as reading, penmanship, arithmetic, geography, etc.; 3, treatment of privileges: *a*, general principles concerning privileges; *b*, method of granting them: (*a*), going out; (*b*), leaving seats; (*c*), speaking, etc.; 4, the programme should provide for: *a*, opening and closing exercises; *b*, intermissions; *c*, recitations; *d*, study; *e*, transaction of general business; *f*, administration of discipline; 5, attendance and tardiness: *a*, the necessary records; *b*, manner of keeping them; *c*, notices to parents, publication of Honor Rolls, etc.

II. Deportment.
A. Inculcate general morality—instruct in cardinal virtues:
1, truth; 2, purity of speech; 3, love; 4, good nature; 5, industry; 6, temperance; 7, politeness; 8, honesty; 9, integrity; 10, preferring one another.
B. School morality:
1, put behavior at school on the law of morality—wrongdoing in school deportment *is sin*; 2, instruct as to neatness, promptness, quietness in walking, whispering, laughing, handling books and slates, etc.; observance of school plans.

III. Study.
A. Branches to be studied in the school.
B. Branches to be studied by each pupil.
C. The formation of classes.
D. Examinations, oral and written.
E. Recitation records.

IV. Government.
A. The object of government:
1, to teach that government is supreme; 2, to cultivate the habits of obedience and subjection; 3, to facilitate the employments of the school; 4, to promote the general good.
B. Means of preventing offences:
1, suitable accommodations; 2, qualified teachers.
C. Good management:
1, have a definite understanding with pupils as to rules and regulations; 2, conduct the school according to your sense of the fitness of things; 3, make it appear that you entertain large expectations of your pupils, both as to study and deportment; 4, maintain your system, and adhere to your programme; 5, practise self-denial for the good of your school; 6, be in no haste to inflict punishment, especially corporal punishment; 7, let your administration be wise, certain, consistent, and uniform; 8, display charitable, generous, and kind feelings, and not an exacting, severe, and authoritative manner; 9, so dispose your management that your pupils go through their duties without seeming to be guided; 10, let all learning, as far as possible, be a process of delight, 11, mind little things.

V. Elements of Governing Power.
A. The teacher must have system:
1, time for everything; 2, place for everything; 3, method for everything.
B. Energy.
C. Vigilance.
D. Firmness.
1, a will of great strength, but not obstinate; 2, decisions must be made with certainty, and must be enforced steadily, wavering is fatal; 3, a firm hand in government is a source of pleasure to pupils, because it is a source of certainty and security.

E. Confidence.
1, in the triumph of duty faithfully executed; 2, in self; 3, in pupils; *a*, pupils are generally undervalued as to latent power; *b*, offences by mistakes and inadvertency generally outnumber those committed by design and malice; *c*, give more attention to the dull and vicious, than to the apt and moral.

F. Self-control:
1, self-possession of your intellectual forces; 2, impatience must be repressed; 3, anger must be crushed; allow no antagonism between yourself and pupils and parents.

G. Personal influence:
1, bring moral, social, and intellectual worth to your support; 2, maintain cheerfulness; 3, withhold nothing in your power.

H. Culture:
1, refinement in manners; 2, pleasant tones of voice; 3, avoid affectation; 4, consideration of the wants and comforts of all.

BILL OF INDICTMENT AGAINST OUR ENGLISH NOTATION.

BY PROFESSOR MEIKLEJOHN, ST. ANDREW'S UNIVERSITY.

1. An Alphabet of 26 letters is set to do the work of 45 sounds.

2. In this Alphabet of 26 letters, there are now only 8 true and fixed quantities.

3. The remaining 18 have different values at different times and in different positions; and sometimes they have no value at all. In other words, they have a topographical value.

4. Some of these 18 letters do—in addition to their own ordinary work—the work of three or four others.

5. A Vowel may have from 20 to 30 functions in our English Notation; a Consonant may have two or three.

6. There are 104 ways of representing to the eye 13 vowel-sounds.

7. Six of these vowel-sounds appropriate to themselves 75 ways of getting printed.

8. In the most purely English part of the language, the letters are more often misleading than not. In the word *cow* or *they*, for example, there is no single letter that gives any true knowledge or guidance to the child. That is, the letters in the purely English part of our composite speech have a historical, but no present, value.

9. The monosyllables of the language contain all its different notations, and these with the maximum of inconsistency. In reading the monosyllables, the child can trust neither his eyes nor his ears.

If this notation—which is the dress of language—could be exhibited to the eye by the help of colours, it would seem to be of the most piebald character. It would be not inaptly described by a sentence in one of Dickens' novels: 'As for the little fellow, his mother had him attired in a costume partly Scotch, partly Hungarian, mostly buttons,* and with a Louis Quatorze hat and scarlet feather.'

If we compare the notation of our English tongue with the notation of the German language, we shall find that—as in its words, so in its letters—German is an almost perfectly homogeneous language. One sound is permanently, and not provisionally, represented by one symbol; one symbol is permanently translated by one sound; and the consequence is that the experience of the German child in learning to read is always self-consistent, and every effort he makes tells towards the desired result. The attitude of his mind is a simple and easy one; every act of attention he makes tells towards the required total; he cannot go wrong if he pays any attention at all; his eye and ear are always in accord, and help each other. Far different is the condition of the poor English child. His attention to the letters will quite as often mislead him as not; in the purest English, the less attention he pays to the letters the better; and he is like a man in trade—he may often be working as hard to make bad debts as to make good ones. The contrast between the work of the German Teacher and of the English Teacher is just as great. The German Teacher's work is simple and straightforward; while the work of the English Teacher is at least five times as difficult, and the conquest of these difficulties requires keen skill, perpetual inventiveness, and untiring perseverance.

Now all this has come to pass simply from the independent and highly individualized character of the Englishman. A local usage—a traditional custom would always override general convenience or a merely abstract consideration like logical consistency. Indeed, the confusion in our notation has parallels in almost every side of English life. It has an extraordinary parallel in our Weights and Measures, which have been regulated—down to the date of the 1878 Session of Parliament—entirely by local custom. An imperial bushel of corn is estimated in Mark Lane at 63 lb.; but it was—down to 1878—72 lb. at Wolverhampton and Stafford, 70 lb. at Liverpool, and 75 lb. at Chester. In short, there were, prior to the passing of the Weights and Measures Act, twelve different kinds of bushels in use in the grain trade. This state of things gave rise to endless confusion. A man might buy his wheat by one measure, sell it by another, and, last of all, demand to be paid for it by weight. These complications involved endless reckonings, and, by consequence, numerous mistakes. They were a great hindrance to trade, and, no doubt, were now and then the cause of serious losses. Another parallel is to be found in the coinage of Austria. There is gold money; there is silver money—some of it debased and deteriorated; and there is copper money; but, in addition to these, there are four different kinds of paper money in four different languages, and some of it is debased to the extent of sixty per cent. It is plain that, if one received payment of an account in six of these different kinds of money, there would be—over and above the circulation of the value of the things brought *in a self-consistent arithmetic*—another reckoning based upon the relative and temporary values of the different kinds of money. In such reckonings, a foreigner and a child would be at a very great disadvantage. Now, just as an English bushel or an Austrian coin is continually changing in meaning and value; so the symbols by which we attempt to carry words to the eye of a child are constantly changing in meaning and value; and the child's mind is proportionally confused and weakened. If we had in our arithmetic a traditional system of notation made up of the fragments of the Greek, the Roman, and the Arabic systems; if 479 were written down as ΔVII9; and if, moreover, our coinage were so irregular that sixpence in Middlesex counted for eightpence in Surrey, but was only fourpence in Hertfordshire, then it would be a very difficult, tedious, and expensive process to teach arithmetic in our public schools.

The difficulty that would be felt, and the expense that would be incurred, in teaching such arithmetic as I have indicated are really felt and incurred in the teaching of reading—in putting into the minds of children an acquaintance with the bad habits of our notation. For the problem is not to make the child acquainted with 26 letters; it is really to make him acquainted with and thoroughly practised in 158 eccentric and self-inconsistent habits which the English have acquired in the course of time, of writing down the sounds of their mother-tongue. To master 158 combinations would require 158 separate acts of attention—each of which must be re-

*The buttons would represent the *es*.

peated until the whole are thoroughly mastered. Well; this can be done. But the difficulty is even greater than this. Of these 158 habits, some are inconsistent with and destructive of each other; and the *experience* of the child is not a regular process of addition and cumulation, but sometimes of subtraction and loss. Let me take an example. There are in the language 59 words in which the symbol *ou* sounds as in *house, noun* &c.; and, of course, if the child meets with a large number of such words, he naturally and quite unconsciously draws the conclusion that *ou* will always have this sound. But, by and by, he lights upon words like *your, four, would mould*; and now, not only is his previous experience entirely upset, but he forms a vague idea that to *ou* may be attached almost any sound whatever. Now, if we attempted to give an arithmetical value to his experience we might say: He has met the first case of *ou* nine times; he has met the second class six times; and his experience is therefore equal to three. This is, however, rather a favoring way of putting it. The fact is, that, in our every-day procedure with children, the exceptions make themselves quite as important as the rule; and both teacher and child, in a kind of silent intellectual despair, give up the guidance of the rule altogether, and teach and learn each word separately, as an individual, and not as one of a class.

The child at first expects to find a certain truth in these marks; but he quickly comes to feel that it is no matter what sound you give to a sign—that the sign itself has only a chance value; and so far as training is concerned, the teacher soon discovers that his eye is never rightly or thoroughly educated until after the expenditure of a disproportionate amount of time and money. He has constantly to read off letters that are not there, and to ignore letters that are there; he is constantly coming upon new forms for the same sound, and new sounds for the same form, so that habit is out of the question. So far as the mind of the child is concerned, unless the teacher adopts a scientific method, no wish for classification ever arises in the child; or it sets in late, if it sets in at all. His past experience is constantly putting him out—constantly tripping him up; until at last he comes to feel that he need not rely on his own exertions, but must be constantly helped over the stones by the teacher. Thus all *teaching* of reading becomes *telling*; and these are just contraries and exclusive of each other. And here is another loss; our evil notation tends to destroy good teaching.

To put all this in a few words: *The character of our Notation prevents the formation of habits.* How serious a matter this is in education, how serious an expense it is to the country, a little reflection will show. The whole aim of education is to form habits. Habits are formed by the perpetual repetition of small acts of the mind or of the body; and the more often these acts are repeated, the more easy it is to perform them, until at length they become a part of the spontaneous nature, and are performed with perfect ease and pleasure, and beneath consciousness. In other words, power has been produced; and the exercise of power is always accompanied by a relax of pleasure—stronger or weaker according to circumstances. But not only is power produced by the repetition of innumerable acts of attention: a method or *path* is beaten through the subject itself by this perpetual treading of the feet of thought; and the trained child can use the knowledge he has gained for the conquering of the unknown. He does not need to be *told* this and that and the other thing; he knows himself how to *learn*—he has a method; and he takes hold of every new appearance by the right handle. But these perpetual inconsistencies, these constantly recurring self-contradictions, this interminable challenge to the child not simply to recognise so many letters, but to ask himself what is their value here and there—to ask himself whether he must not ignore and cut them altogether—prevent the growth of habit, the production of power, the formation of a path or method. They almost compel both teacher and pupil *to learn every word as a separate and individual entity*—just as he learns to know men and women. If, when the symbol varies and the sound remains the same, the child cannot believe his eyes; and when the sound varies and the symbol remains the same, he cannot believe his ears; and if the eyes and the ears are the two main avenues to knowledge, it follows that we begin the mental education of most of our children by demoralizing and confusing these two all-important organs. We invite the children to walk in what ought to be a plain path—the smooth and delightful road to the city of knowledge; but this path is strewn with rough historic boulders, which delay their goings and weaken their intellectual limbs. For, as I have said, most of the letters have only geographical values; and the young child's mind has to solve the difficult practical problem of Sir Boyle Roche, and to be 'in two places at once.'

The two sets of difficulties I have described so interlace with and ramify into each other, as to entirely prevent the formation of habit. In fact, they destroy mental habit. And habit, as has been said, is power; and these two difficulties really go therefore to paralyze all mental power in the child—so far as reading is concerned. The logical conclusion that our English children must learn each word as an individual is borne out by the fact that they do learn to read in this way. Every person I have spoken with—H.M. Inspectors, Teachers, Managers, and many others—have expressed to me their conviction that English children learn their words as separate and individual existences; and many of them go farther, and affirm that classification is useless if not impossible. Thus, for the child, our language sinks nearly to the level of Chinese. The essence of European thinking is classification; but, so far as the notation of our language is concerned, we are out of the European sphere. And it is this tedious and mindless process that costs the country so much; the improvement of our methods would result in an enormous cheapening of the process. This is a consideration which cannot be too earnestly pressed upon the attention of the Education Department, School Boards, and School Managers. In the schools I have visited in every part of the country, I have always found both teachers and children working with far too much strain against these difficulties, beating up against contrary winds, driven hither and thither by the cross currents and chopping seas of our different notations, and accumulating solid and trustworty experience—at the expense of the country—in the slowest and most laborious possible fashion. Just as twenty-five per cent. of base or depreciated coin thrown into the circulation of the country would upset all commerce, and turn bargaining into barter or merely individual transactions, the twenty-five per cent. of anomalous notation (and this is a very moderate estimate) turns almost all the mental effort of the child into a momentary shift—into a series of hand-to-mouth transactions. In other words, the child cannot accumulate experience with ease or economy; he is constantly meeting with new complications which his past experience will not unravel—in fact, he works as if he had no past, or—what is worse than no past—a past of broken habits and loose perceptions, behind him. No wonder that the lower classes find it difficult to learn to spell.

There is a passage in *Alice through the Looking-glass* which describes, as if in a parable, the difficulties felt by most children in their attempts to master the reading of our mother-tongue:

Whenever the horse stopped (which it did very often), he fell off in front; and whenever it went on again (which it generally did rather suddenly), he fell off behind. Otherwise he kept on pretty well, except that he had a habit of now and then falling off sideways; and as he

generally did this on the side on which Alice was walking, she soon found it was the best plan not to walk *quite* close to the horse.

"I'm afraid you've not had much practice in riding," she ventured to say as she was helping him up from his fifth tumble. The knight looked very much surprised and a little offended at the remark. "What makes you say that?" he asked, as he scrambled back into the saddle, keeping hold of Alice's hair with one hand, to save himself from falling over on the other side.

"Because people don't fall off quite so often when they've had much practice."

"I've had plenty of practice," the knight said gravely; "plenty of practice!" Alice could think of nothing better to say than "Indeed!" but she said it as heartily as she could. They went on a little way in silence after this, the knight, with his eyes shut, muttering to himself, and Alice watching anxiously for the next tumble.

"The great art of riding," the knight suddenly began in a loud voice, waving his right arm as he spoke, "is to keep"—— Here the sentence ended as suddenly as it had begun, as the knight fell heavily on the top of his head exactly in the path where Alice was walking. She was quite frightened this time, and said in an anxious tone, as she picked him up: "I hope no bones are broken?"

"None to speak of," the knight said, as if he didn't mind breaking two or three of them. "The great art of riding, as I was saying, is—to keep your balance properly. Like this, you know"—— He let go the bridle, and stretched out both his arms to shew Alice what he meant, and this time he fell flat on his back right under the horse's feet.

"Plenty of practice!" he went on repeating, all the time Alice was getting him on his feet again. "Plenty of practice!"

"It's too ridiculous!" cried Alice, losing all her patience this time. "You ought to have a wooden horse on wheels, that you ought!" "Does that go smoothly?" the knight asked in a tone of great interest, clasping his arms around the horse's neck as he spoke, just in time to save himself from tumbling off again. "Much more smoothly than a live horse," Alice said, with a little scream of laughter, in spite of all she could do to prevent it. "I'll get one," the knight said, thoughtfully to himself. "One or two—several."

"The great art of riding is to keep your balance properly;" and the great art of reading is to know when to give the sound, and when to give this sound, and when to give another sound to the same letter, and to keep your mental balance among all this confusion. Alice "found it was the best plan not to walk *quite close* to the horse;" and children very soon instinctively learn that it is the best plan not to keep *quite close* to the letters, but to be ready to give a new sound to the old friends at discretion or indiscretion. And thus a want of firmness, confidence, and mental clearness is generated, which probably delays the acquisition of other subjects, and which may in fact stick to the pupil all his life. For the attitude of the mind in learning to read English is not a simple one—like the mental attitude of the German child. It is a threefold state of mind. The child has to do not one thing, but three things:

1. He has to notice when he must *not* notice (in the case of *silent* letters);
2. He has to notice when he must alter his translation of a symbol—or be *false* to his past experience;
3. He must notice when to give the old translation, or keep *true* to his past experience.

It is very difficult to make one set of movements with the right hand, and a different set with the left; but if we had to keep up a third and still different set of movements with one of the feet, it would be a very slow and difficult thing to learn.

The language contains more than 1300 words the notation of which is not in harmony with the pronunciation; and these 1300 words are the commonest—the most in daily use. Of these, 800 are monosyllables—and these too in the most common use—words like *too, said, they, brought, one,* and *once.* The problem of teaching to read a true notation is to train children to co-ordinate with and fit to the *eye-language* (the printed symbol), which they do not yet know, the *ear-language*, which they have known from their earliest days. But what if the eye-language refuses to be fitted to the ear-language? What if they have long bid each other good-bye and taken separate paths? What if the task becomes for the child a merely arbitrary and entirely forceful linking of the one to the other?

The important question now arises: *Is there an antidote to this state of things?* The two diseases or malformations in the language are plain to every one; and they are perpetually present to the elementary teacher. What are we to do?

The analogy in human affairs points to the fact that the presence of a great defect in one direction points to the presence of a great power in another direction; and the question arises: Is there, for the enormous deficiencies and absurdities in our notation, some countervailing advantage in the language?

I believe there is an antidote—a very simple but a very effective one. The antidote is to be found in the language itself. It is easy by the invention of diacritical * marks, to guide the child to the ordinary pronunciation; but then these diacritical marks are themselves a new notation. The cure is not to be found in that direction. The language is poor in letters; but it is rich in words. The wealth of the vocabulary may make up for the poverty of the alphabet. There is no more common experience in the writing of English than the quickness which the mind soon acquires in rejecting this phrase and preferring that—in substituting one word for another—in selecting, among a number of candidates, the aptest word for the purpose. There is probably no European language with so many different words for the same notion; and it is quite possible to write one's ideas in two perfectly different kinds of English—Latinised English or pure English. This then raises the hope—is it possible that, by conscious selection, we should come to write English which should present no difficulties to the learner, and which should be printed in a self-consistent notation?

I have made the small but important discovery that there is such a notation in the language, and that it is possible to write decent English in it. Among the detritus of notations which represent the English language upon paper, there exists a PERFECT NOTATION, which is always self-consistent, and in which sound and symbol are always in agreement. This perfect notation represents the twenty-six letters of our alphabet in only one of their functions; and, if intelligently taught, it can be learned with pleasure in a very short time. Narrative of all kinds—Bible Stories, Travels, Natural History, and even Verse—can be written in this perfect notation without much injury to the style and rhythm of the language.

If this is so, then it follows that the existence of this perfect notation at once puts into our hands the true method of teaching to read. Acquaintance with one self-consistent notation forms the primary condition of all methods and all attempts at teaching the paper-form of our language to young children.

A child who has mastered this has mastered it with all his faculties preserved to him, his rational and "natural" expectations gratified, and his love for self-consistency and intellectual honesty contented.—*How to Teach English Reading.*

WHO BELIEVE IN EDUCATION?

The idea is very widely diffused that the "educational party" is very large, and by this term is meant commissioners, trustees, superintendents, principals, teachers, and that indefinable class "friends of education"—meaning those who send to school or "holler" about the schools—when they are running for an office. Do not for a moment suppose that all these people believe in education.

(1.) What a man knows nothing about, he does not, cannot, believe in. Now, how many of all the above classes know about education, its history, its principles, its ideas, its methods, its expounders, its prevailing tendency to-day, the stages of its progress, the history of its founders, the influence of each, &c., &c.?

* Such marks, I mean, as are used to indicate silent letters, etc., etc.

(2.) What a man believes in he will invest something in. Who are investing in education? Is not the class very small? Ask Henry Barnard, ask the publishers of educational journals, and teachers. Ask those who are attempting to advance education.

Look at the Principal of yonder large public school, and consider his works and his methods. Yes, consider his stock in trade. Is it not a small one? He begins to-day where he left off yesterday. The profound influence of the world of ideas is unfelt by him; he teaches (as he calls it) without meddling with ideas. What cares he for Pestalozzi, Comenius, Arnold or Page? That they grappled with education hand to hand, in living contact, is totally unknown by him. He "hears classes" to-day with no more additional knowledge than he had when he was declared fit for the mighty task more than twenty years ago. Fit? How was he fitted? What gave him fitness? That he knew how to perform the ordinary problems in arithmetic, could parse even in Pope's essay, and bound the States, give the capitals, spell the words in the spelling books and many others? By no means! Those are not the claims a right-minded man will make that he should be the moral and intellectual leader and adviser of one or one hundred young persons.

Let us see what spirit he is of. Does he really believe in education? It would seem so. But actions speak louder than all his fine professions. Look into his library. He has a few volumes, perhaps a good many. We are not speaking of general literature, but of education. Look over his shelves and see. Is it possible? Not a cent! Not a volume—unless it be the last year's reports, which cost him nothing. "Alas! poor Yorick, we knew him well."

What is he investing in now? Does he read an educational journal? Does he attend any educational associations? Does he attempt to obtain the views of others? Does he attempt by writing and speaking to have some views of his own? Not at all. He has got a place; he believes in the money he gets, but he *does not believe in education.*

And if we should look at the fashionable who has yonder "young ladies' school," we should very likely find it was just so there. Everything is in order. It is not elegant to eat much, or to be very much in earnest about anything; these are maxims she teaches, as well as those pertaining to polite literature.

Trustees can with some show of reason say "why should we know about education? It is the business of the teacher." But what if the teacher does the same!

Here are very serious things to think over. Read the growing statistics with pride if you will, but reflect at the same time that there is a vast number of *educational atheists.* PROBLEM—Are you, reader, one of them?—*New York School Journal.*

"THE DISADVANTAGES OF CITY BOYS."

Some months ago, Rev. Washington Gladden, of Springfield, Mass., believing that if he could find out how the active and prominent men of his own city spent their boyhood, it would help to solve the problem of what is the best training for boys, prepared the following circular, which was sent to the one hundred men who could fairly be said to stand at the head of the financial, commercial, professional and educational interests of the city:—

"MY DEAR SIR:—I desire to find out, for the benefit of the boys, how the leading men of this city spent their boyhood. Will you be kind enough to tell me—1. Whether your home during the first fifteen years of your life was on a farm, in a village, or in a city? and, 2. Whether you were accustomed, during any part of that period, to engage in any kind of work when you were not in school? I should be glad, of course, to have you go into particulars as fully as you are disposed to do; but I do not wish to tax your patience, and I shall be greatly obliged for a simple answer to these two questions."

No less than eighty-eight of the busy gentlemen who received this circular were kind enough to answer the questions, some of them briefly, most of them quite fully, and it turned out that few had been brought up like most of the boys who crowd the ball grounds and fill the streets of our cities in these latter days. Here is a brief summary of the returns:

Of these eighty-eight men, twelve spent the first fifteen years of their life in the city, twelve in villages, and sixty-four were farmers' boys.

But of the twenty-four who lived in villages and cities, six were practically farmers' boys, for they lived in small villages, or on the outskirts of cities, and had the same kind of work to do that farmers' boys have. One of these village boys said:—"I learned to hoe, dig, and mow; in fact, I was obliged to work, whether I liked it or not. In winter I went to school, and worked nights and mornings for my board."

Another said: "I used to work away from home, some on a farm, in the summer and fall. In the winter, when going to school, we three boys used to work up the wood for summer use."

Four others told substantially the same story. As these were about the same as farmers' boys, we may add them to that list, so that seventy out of eighty-eight, almost four-fifths of all these men, had the training of farm life.

Now, how was it with the eighteen city and village boys on the list? Did they have an easy time of it? Five of them did, as they testify; five of them had no work in particular to do, but one of the five says that he studied law when out of school, and that was not exactly play. The rest of the eighteen were poor boys, not paupers, by any means, but children of the humbler classes, many of them in needy and narrow circumstances, and though they lived in cities or villages, they were accustomed from their earliest years to hard work.

"Was generally employed," says one, "during the summer months, and in vacations, in doing any kind of work that offered."

Four of the city boys were newsboys. One of them says: "The last year I was connected with the press I earned one hundred dollars before breakfast."

Another: "I have paid my own way since eight years of age, without any assistance except my board, from my eighth to my eleventh year."

Of all these eighty-eight boys, five only had nothing particular to do.

While these boys were growing and working, a great many others, sons of merchants and lawyers, were growing up in Springfield, going to school, and amusing themselves, as boys of their class are apt to do. Where are they? Only five of this class are heard from among the eighty-eight solid men of that city. Some of them, perhaps, are prosperous men in other cities, but the number cannot be large, for in Springfield only five men out of eighty-eight came from this class. Ninety-four and a half per cent. were either farmers' boys, or poor and hard-working town boys.

Mr. Gladden made his report to the public of Springfield, in the form of a lecture. The mere announcement of the subject alone crowded the church, which is a large one, and the interest in the lecture was so great that the Mayor and several of the representative citizens requested a repetition in the Music Hall. When this came off the hall was packed, and hundreds went away from the doors unable to gain entrance.

Mr. Gladden has rewritten the lecture, and his interesting facts and logical deductions will appear in one of the leading magazines for March. He is now engaged on a "Talk with Girls," for the same magazine. It will be printed before long, and will be of vital interest to girls, and suited to their requirements, as this paper is suited to the boys.—*St. Nicholas for March.*

THE HANOVERIAN VILLAGE SCHOOLMASTER.—The schoolmsater unites in one person the duties of sexton, grave-digger, and bell-ringer. All teachers must have passed an examination held by the state, for which they are prepared by some years' study at preparatory schools and a three years' course at one of the eight normal schools in Hanover. In order to enter these schools, the applicant must be eighteen years old and be able to pass an examination in the elementary studies. Teachers earn from one hundred and seventy-five to two hundred and twenty-five dollars a year. In E—— the teacher received eighty-seven cents a year from each of his one hundred pupils, fifteen dollars a year from the church for his services as sexton, besides fifty cents for each adult's and twenty-five cents for each child's grave dug by him. From the state he got eighty-two dollars, and from the village seven dollars and fifty cents a year, with six acres of good farming-land and a house. All the books and maps I saw were of the most old-fashioned sort, and the teacher was drunk whenever he had money enough to buy schnapps. The church consistory appoints and removes the village teachers throughout Hanover. Teachers are not considered socially equal to nor do they associate with ministers. With the teacher ends the list of village officers, and next come those communal servants for whom we in this country have no equivalent.—*From "Hanoverian Village Life," by Walter Nordhoff, in Popular Science Monthly.*

IMPORTANCE OF A KNOWLEDGE OF POLITICAL ECONOMY.

Of the importance of the questions with which political economy deals it is hardly necessary to speak. The science which investigates the laws of production and distribution of wealth concerns itself with matters which among us occupy more than nine-tenths of human effort, and perhaps nine-tenths of human thoughts. In its province are included all that relates to the wages of labour and the earnings of capital; all regulations of trade; all questions of currency and finance; all taxes and public disbursements—in short, everything that can in any way effect the amount of wealth which a community can secure, or the proportion in which that wealth will be distributed between individuals. Though not the science of government, it is essential to the science of government. Though it takes direct cognizance only of what are termed the selfish instincts, yet in doing so it includes the basis of all higher qualities. The laws which it aims to discover are the laws by virtue of which states wax rich and populous, or grow weak and decay; the laws upon which depend the comfort, happiness, and opportunities of our individual lives. And as the development of the nobler part of human nature is powerfully modified by material conditions, if it does not absolutely depend upon them, the laws sought for by political economy are the laws which at last control the mental and moral as well as the physical states of humanity.

Clearly, this is the science which of all sciences is of the first importance to us. Useful and sublime as are the sciences which open to us the vistas of Nature—which read for us the story of the deep past, or search out the laws of our physical or mental organization—what is their practical importance as compared with the science which deals with the conditions that alone make the cultivation of the others possible? Compare on this ground of practical utility the science of political economy with all others, and its preëminence almost suggests the reply of the Greek: "No I cannot play the fiddle; but I *can* tell you how to make of a little village a great and glorious city!"—Mr. Henry George, *in Popular Science Monthly for March.*

THE SLAUGHTER OF THE INNOCENTS.

I may here record the hours of a school for girls, which appear to me to exceed what is wholesome, and to be well calculated to lessen their mental elasticity and interfere with their healthy development. These girls rise at 6.25; prayers are at seven, and breakfast at a quarter to eight. Their studies commence at a quarter-past eight and last till twelve, with a break of a quarter of an hour; then dinner, during which silence is enjoined and a book read aloud; then an hour's recreation is allowed. Needle-work and school-work follow for two hours; half an hour's recreation succeeds, and then come two hours and a half of study and instruction of various kinds. The next meal after the twelve-o'clock dinner is at half-past six, and this is the last. It is succeeded by half an hour's recreation, and this by half an hour's study. Prayers end the day at half past eight. Here we have nine and a half hours (including religious exercises) of sedentary occupation, and only two hours and a quarter for recreation and one hour and a half for meals. I think we shall be agreed that a little less school and a little more play would be desirable, and that there need be no cause for surprise to find that many of the scholars suffer from head-aches, anæmia, arrested development, and various manifestations of exhausted nerve-force.—Dr. Hack Tuke, *in Popular Science Monthly for March.*

Examination Questions.

EXAMINATION PAPERS.

FOR TEACHERS' CERTIFICATES, CALIFORNIA.

First Grade A.—Arithmetic.

1. What is involution? evolution? cube root? Why in square root, do you point off into periods of 2 figures each?

2. A road is 60 ft. wide: on its left side stands a tower 300 ft. high—how long would a line require to be to reach from a window 20 ft. below the top of the tower to the middle of the road?

3. What is a fraction? The value of a fraction? What is the value of $2\frac{1}{5}$? Why do you reduce fractions to a common denominator before adding? Upon what principle do you reduce fractions to the Least Common Denominator?

4. A man is offered \$5.00 a barrel cash for 100 barrels of flour, and is at same time offered \$5.50 on 9 months' credit, which is the better offer, and how much, money being worth 1% per month?

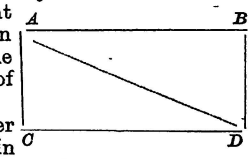
5. 3 men, A, B, and C, enter into a partnership. A puts in \$5000 and 5 months after takes out \$1000. B puts in \$6000. C puts in only \$1000. At the end of the year their gain is \$9000; of this C is to receive $\frac{1}{6}$ for managing the business, the balance being divided amongst them all according to their respective stock and time. How much does each receive?

6. Needing \$600 for three months, I borrow at the bank at $1\frac{1}{2}$ per cent. per month. What must be the face of the note? (No days of grace.)

7. Extract the square root of $\frac{11}{25}$.

8. If 6 men can dig a trench 216 ft. long, 4 ft. deep, 2 ft. wide in 10 days, working 8 hrs. a day, how many men will dig a trench 5 times as long, $1\frac{1}{2}$ times as wide, $\frac{3}{4}$ as deep, working 10 hrs. a day?

9. A piece of land is rectangular, 400 rds. by 300 rds. A road runs all round it, and another goes straight from *D* to *A* through *C* the centre? A man is going from *D* to *A*, how much will he gain by going the "centre road" instead of first to *C* and then to *A*?



10. Sent my agent \$4,200 which, after deducting commission at 5%, he invested in silk at \$2.00 per yard. I paid for freight, etc., \$25; and so ld at \$2.60 per yard. How much did I gain on the whole?

First Grade A.—Geography.

Values.	
6	1. Of what service is the ocean? (Answer fully in a few words.)
9	2. What formed the slopes, plains, and valleys? Where are the seas, gulfs, bays, and lakes most numerous? In what respect do Africa, South America, and Australia resemble each other?
10	3. How do you account for shells being found on the tops of high mountains? In what direction do mountain chains generally run? Where are the highest plateaus on the globe?
10	4. What part of the earth's surface is the hottest? why? How is it that *Quito* has such a temperate climate?
	5. What keeps the water of the ocean pure? How do you account for icebergs being found in the ocean as far south as Newfoundland? What is the difference between a glacier and an iceberg?
10	6. Name the different zones, and give the limit of each. In which zone does most of the land surface lie?
10	7. Name and locate 4 noted volcanoes. What is a lake? In the mines in Nevada it is so hot that men cannot easily remain long at the bottom of the mines. How do you explain this heat?
10	8. Explain what causes the trade winds. Where do they prevail and in what direction do they blow?
10	9. Explain clearly the cause of day and night.
15	10. Tell all you can about the ocean currents, stating what causes them and where found.

First Grade A.—Longfellow.

Values	
10	1. What countryman is Longfellow? Where does he live? Name 2 other poems beside Evangeline that he has written.
10	2. What are the historical facts on which Evangeline is based? (Answer fully but briefly.)
15	3. Describe Evangeline's person and character as you have gathered it from the poem. (While examiner will allow for difference of opinion, this question must be marked closely; vague statements will not do.)
35	4. Part second of poem. Where was *Grand Pre'*? "freighted vessels" with what? Explain clearly following:— "household gods" "Acadians" why? "Banks of Newfoundland" what are they? "Southern savannas" "Father of

waters," "Seizes the hills in his hand, and drags them down to the ocean." "As the emigrant's way o'er the western descent is marked by campfires long consumed, and bones that bleach in the sunshine." "Urged by a restless longing" caused by what? "Voyageur?" "Prairies of fair Opelousas" where? "A wilderness sombre with forests" "turbulent water" why so called? "Cotton-trees nodded their shadowy crests" what is meant by "shadowy crests?" why so called? "lagoons?" "rushing chutes?" "maze of sluggish and devious waters?" (In marking above, examiner must not accept vague answers; they must be clear and to the point.)

30 5. Write in prose, using your own words as far as you can, the latter part of Part I, beginning at

"overwhelmed with the sight, yet
speechless, the priest and the maiden."

Values *First Grade A.—Grammar.*

1. Analyze—

10 "I *bring* fresh *showers for* the *thirsting* flowers,
From the seas and the *streams;*
I *bear* light shades *for* the leaves *when laid*
In their noon-day dreams."

20 2. Parse words italicized in No. 1.

15 3. Write a synopsis of the indicative active and passive of "SING"—giving only 3rd person singular.

15 4. Give imperative and infinitive and participles active and passive of *throw.*

10 5. Why is the subject of a finite verb in the nominative? What do you mean by a *finite verb*? When is a noun in the objective case?

4+6 6. Why do nouns have number? Form plural of: army, attorney, loaf, knee, tomato. Give possessive sing. of same words.

7. What are the different ways of distinguishing the masculine and feminine genders?

2+4+4 Give feminine of: stag, hero, executor, uncle.
Give masculine of: widow, poetess, abbess, nun.

8. Parse *that* in :*That* man told me *that that that* is badly written.

Notes and News.

ONTARIO.

Hon. Adam Crooks has gone to England. It is understood that one of the objects of his visit is to secure a Classical Professor for University College, Toronto.

Mr. D.P.Clapp, B.A., has been appointed Inspector of the schools of Listowell. The new High School in Listowell is about ready for occupation.

Mr. William Anderson, English Master of the Toronto Collegiate Institute and one of the founders of the Ontario Teachers' Association, has been appointed Auditor of the city of Toronto. We commend the principle of appointing teachers to good municipal situations. It is one of the ways in which a community can in some measure repay its debt to the earnest teacher. Mr. Samuel Hughes, who has taught the Preparatory form in the Institute during the past five years, has been promoted to the position vacated by Mr. Anderson; and Mr. Peter McEachren, an honor undergraduate of Toronto University, takes charge of the Preparatory form. Mr. McEachren received his training in the Institute.

Mr. Somerville, Inspector of the South Riding of Wellington, has resigned his position. His resignation will be a great loss to the teaching profession in the province. The warden of the county has appointed Mr. Donald McCaig as his successor until the meeting of the County Council.

Mr. Sandford Fleming, C.E., has been elected Chancellor of Queen's University for the next three years.

Mr. Jeffers, principal of the Peterborough Collegiate Institute, has intimated to the School Board that he will resign his position if they put in force a resolution to reduce the salaries of the teachers of that town.

The following officers were elected unanimously at the last meeting of the East Middlesex Teachers' Association: President—John Dearness, I.P.S.; First Vice-President—Mr. Jarvis; Second Vice-President—Miss Boone; Secretary, Mr. Boone; Treasurer—W. D. Eckert.

The Ingersoll *Chronicle* speaks thus of the High School: "We are pleased to note the prosperous condition of our High School. The present able staff is now composed as follows: Mr. A. M. Morris, head teacher; Mr. Marchant, late of Port Dover, and Mr. W. Green, of Port Hope, first and second assistants, respectively. The best of order is being maintained, and the pupils are receiving a thorough education."

The teachers of East Middlesex have resolved to have uniform examinations twice a year. They also resolved to petition the County Council for the establishment of a High School in East Middlesex.

On the recommendation of Mr. W. E. Tilley, head-master, the afternoon recess has been done away with in the Lindsay High and Public Schools, and the schools are dismissed at a quarter to four o'clock, instead of four o'clock as formerly.

The London Board of Education, after a lengthy discussion, decided, by a vote of 12 to 6, to retain music as a subject to be taught in the schools.

PAKENHAM HIGH SCHOOL.—Owing to representations made to the Government, the Ontario Educational Department has passed an Order-in-Council rescinding the Order abolishing the Pakenham High School.

The *Canada Champion* says: "We are informed that a lively trustee meeting recently took place at a certain section of Trafalgar. A boy had been expelled from school, and at the trustee meeting to decide whether he would be admitted again, his father and one of the trustees got into high words, and went outside to settle it, which they did in a square, stand-up fight, lasting fifteen minutes. They then shook hands, having more respect for each other than ever.

There are twenty-five students in Toronto University who are in several stages actively proceeding to the degree of LL.B., 200 to the degree of M.B., and 400 to the degree of B.A.

The following information is gleaned from the annual report of Mr. Smith, Inspector of Schools in Hamilton:

TEACHERS, THEIR QUALIFICATIONS AND SALARIES.—Of the 89 teachers employed by the Board 4 are males and 85 females, the male teachers being the head masters of the four districts into which the city is divided for public school purposes. Of these 46 have attended the Normal School, 25 have been trained in the County Model School, while the remaining 19 have had more or less experience in teaching, so that at the present time the city schools are under the charge of trained and experienced teachers, a fact that speaks well for their future prosperity. The number of teachers holding first-class provincial certificates is 14; second-class, 44; first-class, old county board, 6; third class, new county board, 26. The highest salary paid to a male teacher was $850; the lowest, $700, the average being $737.50. The highest salary paid to a female teacher was $500; the lowest, $200, the average being $289.35. In addition to the regular staff of teachers, a number of monitors were employed for occasional service and were paid at the rate of $12 per month.

ATTENDANCE OF PUPILS.—The school population (comprising only children between the ages of five and sixteen years) is estimated at 7,950. Of these, 5,714 were enrolled in the public schools during the past twelve months, leaving 2,236 as attending the Separate Schools, Wesleyan Female College, Collegiate Institute and private schools.

The annual report of the Inspector of Schools in Kingston for 1879 gives the following statistics: total number on the rolls, 2,822; boys, 1,412; girls, 1,410; average attendance, 1,391; teachers employed, 28; males 6, females 22; average salary paid, male $537.50, female, $216; certificates—1 first, 15 second and 12 third; no permits. Average attendance for the last half of 1879, 1,407; for 1874, 1,016, showing an increase of 391, or nearly 40 per cent. Cost of the public schools in the city in 1879, $11,860; in 1874, $12,570, showing a decrease of $710.

NOVA SCOTIA.

A case having important educational bearings has recently been decided in the Supreme Court of this province. It may be premised that the Provincial Statutes on Education provide a threefold method for the support of the public schools:—

1. Grants to teachers paid directly from the Provincial Treasury, through the Superintendent of Education, according to grade of service of teacher.

2. A fund for each county levied on its property, and amounting to a sum equal to thirty cents for each head of population according to the last census. The county fund is distributed on the basis of school attendance.

3. Local assessment.

The difficulty issuing in the suit above referred to orignated in refusal on the part of the municipality of Dartmouth to assess itself for its proportion of the county fund for the city of Halifax, claiming exemption through the peculiar wording of its incorporating Act. The suit had been pending for some years, and, having engaged the attention of the leading members of the provincial bar, was regarded as involving important principles in its decision. The Court rendered a unanimous decision affirming the liability of the town of Dartmouth and upholding the educational law in its integrity.

One of the fine educational structures of the town of Yarmouth was destroyed by fire on the 21st ult. It is deplorable to be forced to believe that the only explanation offered is incendiarism. The edifice burnt cost upwards of $10,000, and provided excellent accommodation for a school of six departments, with two hundred pupils.

The Legislative Council, partly perhaps through lack of political measures for discussion, devoted two or three sessions recently to a consideration of educational questions. A solitary attempt to rehabilitate the skeleton of the old voluntary system, or no-system, was received with conspicuous coldness. Whether in other matters or not, in *this* the Legislative Council fairly represents the progressive sentiments of the people at large.

NEW BRUNSWICK.

The annual report of the Chief Superintendent, laid before the Legislature early in March, contains the following statistics relating to the year ending April 30th, 1879:

Number of children at school during the year, 70,889, increase 2,664. The proportion of the entire population of the Province enrolled at school the summer term was 1 in 5.11. The counties in which the proportion was largest were Madawaska (4.35) and Westmorland (4.44). In the winter term, the counties of Carlton (1 in 4.02) and Westmorland stood highest in respect to the proportion of the population at school.

The percentage of enrolled pupils daily present on an average during the period the several schools were in session, was for the Province 55.08 per cent. in the summer term, and 57.49 per cent. in the winter term. The counties of St. John and Madawaska stood highest in this respect in the summer; and St. John (62.96 per cent.) and Albert (59.19 per cent.) in the winter.

During the winter term there were 1348 teachers and assistants employed (increase 47,) 548 of these being men, and 800 women; 1077 were trained and 253 untrained. The classification of teachers was as follows:

	Gram. Sch.	I.	II.	III.
Male	14	134	200	198.
Female		123	341	320.

The steady advance in respect of the length of time the schools are kept open during the year is mentioned as a fact of much moment. The actual number of legal teaching days during the year was 226, and the average time of keeping the school open, exclusive of holidays, vacations and Sundays, was 211.30 days, which was "5.30 days in excess of the average time reached by the schools of Ontario in 1878."

Three hundred and twenty-five persons were admitted to examination for Provincial Licenses during the year, 244 of them by virtue of being student-teachers at the Normal School; 311 obtained licenses of some class.

The whole number of different pupils in attendance at the schools of the Province for some portion of the school year ended October 31, 1879, was 71,764, or 1 in 3.56 of the population by the last census.

Speaking on the subject of county institutes, the report says, "There is much talent in the profession, and every annual meeting of these institutes may be made of increasing interest and profit, if the several Committees of Management are careful to provide practical subjects for discussion, and to seek out those teachers in the county whose ability and experience best fit them to lead in the discussion of any particular subject, or to exemplify correct methods in any particular department of school work.

In relation to Grammar School Grants, the Chief Superintendent speaks as follows: "I think the time has fully come when encouragement should be given to *High School work in whatever district it is performed,* and *in proportion to the character and extent of the work done.* This is the principle which has been adopted for the disbursement of the superior allowance of $7,000. There is no good reason why the High Schools of St. Stephen, Milltown, Newcastle, Moncton, Portland, and the Girls' High School in St. John, should not receive a portion of the money annually applied in aid of secondary education. Their claims are as good as, and even superior to, those of most of the 'Grammar Schools.' In fact, the Grammar School Grants should be thrown open to any and all districts. This would, I am certain, secure more completely the object of the Grant, the encouragement of secondary education. I would, therefore, recommend that on and after November 1st next, any district in the Province be allowed to participate in the Grammar School Grants, according to the number of pupils annually certified as having successfully passed examination in any of the standards that may be prescribed for high school classes by the Board of Education. It should also be provided that any property now owned by the Grammar School Boards should vest in the Boards of School Trustees of the districts in which it lies.

The complete list of the medals offered by His Excellency the Governor General to the Educational Institutions of New Brunswick is as follows:

The University of New Brunswick—A gold and a silver medal.
Mt. Allison Wesleyan College—A silver and a bronze medal.
Saint Joseph's College—A silver and a bronze medal.
The Provincial Normal School—Two silver medals.
The Girls' High School, St. John—A silver medal.
The Provincial Model School—A bronze medal.
The High School, Fredericton—A bronze medal.
The Grammar School, St. John—A bronze medal.
The High School, St. Stephen—A bronze medal.
The High School, Woodstock—A bronze medal.
The High School, Chatham—A bronze medal.
The High School, Newcastle—A bronze medal.
The High School, Moncton—A bronze medal.

At the closing examination of the Normal School, on the 12th of March, there were present: His Honor the Lieut.-Governor, the Chief Superintendent and several other members of the Board of Education, members of the legislature and numerous other visitors. Classes were examined in Reading and Elocution, Geography, Music, Natural Philosophy, English Literature, Natural Sciences, etc., as well as in relation to the principles of Method as applied to certain branches. There were also illustrative lessons given by ten of the student teachers, either in the model departments or in their own school rooms to classes of their fellow-students. Criticisms upon several of these lessons were given by some of the student teachers, who had been observers, and the Principal commented upon these as occasion required. The work was of a highly satisfactory character, and His Honor expressed himself as much pleased with what he had witnessed.

Miss Ellen M. Freeman, formerly of Canning, N. S., is the fortunate recipient of the first silver medal awarded at the Provincial Normal School. The medal itself had not been received at the time of the Terminal Examination; but the name of the successful competitor (if that term is appropriate where there is no active competition on the part of particular students) was announced by the Principal to the assembled students in high terms of commendation.

At the March Examination for License, there were 170 candidates, of whom five worked for the Grammar School Class, 14 for First Class, 128 for Second Class, and 23 for Third Class. About 135 of these were in attendance at the Normal School the past session; the remainder were chiefly licensed teachers, seeking advance of Class. Sixteen of the student teachers examined were already holders of Provincial Licenses, and over fifty of them had previous experience in teaching.

In consequence of the partial destruction of the Legislative buildings, by fire, on the night of the 25th February, the Government was obliged to look about for a place in which the Session of the Legislature could be held. For some reason or other, the Provincial Normal School Building was selected, and at once a change came over the edifice dedicated to Education. Fortunately the Normal School Term was nearly at an end. The Government took possession of the large Assembly Hall, the Principal's Class Room and Private Room, the Library, Laboratory and Reception Room, and a host of workmen speedily converted these into a Hall for the Legislative Assembly, a Council Chamber, Rooms for Committees, Clerks, Telephone, etc., while the Speaker's Room and telegraph offices were fitted up in the long corridor. On the 9th of March the usual ceremonies of opening the Session took place in Assembly

Hall, which temporarily represented the Legislative Council Chamber. Meanwhile the Normal School was confined entirely to three class-rooms and the two cloak-rooms, one of which (*nefandum*!) has since been converted into a smoking room for the legislators. We have read of worse things. Classic fanes and sacred shrines have been used as barracks for rude soldiery.

The York County Teachers' Institute is announced to meet at Fredericton on the 20th and 21st of May.

For "the Truro Council" in the New Brunswick notes of last month, read "The Town Council," referring to the town of St. Stephen.

QUEBEC.

The Protestant Academies and Model Schools of the Province of Quebec have been inspected and examined during the past month (March) by Messrs. Allnatt and Weir. There is an earnest desire on the part of the Protestant Committee of the Council of Public Instruction, in which is vested the management of the Protestant Public Schools of the Province, to increase, as far as possible, the efficiency of the Schools for superior education, especially that of the Academies, and to foster in them to a greater extent than heretofore the study of the ancient classics, so as to prepare young men for matriculating at our Universities. Hitherto, of late especially, there have been very few matriculants in the Universities from other than city High Schools or Academic Institutions in connection with the Colleges of the Universities. The Academies scattered over the Province have been serving as training schools for young men and women preparing themselves to obtain Diplomas as Teachers, an important object no doubt, but one which should be better attained by Normal Schools. At any rate, the study of Latin and Greek should not be altogether neglected, or made to occupy a very secondary place in our Academies. It is not simply that the numbers of classical pupils are few, but there seems to be little importance attached to such studies, and little time and attention are bestowed on them, on the part of the Head Masters of our Academies or their scholars. It is to be hoped that the efforts now being made to promote and encourage classical learning in the Academies of this Province will ultimately meet with success, and that this branch of a liberal education, the advantages of which are, if not altogether unquestionable, well established and depreciated only be those who are ignorant of them, will receive more attention, and be cultivated to a greater extent than heretofore in our Academies.

The Annual Report of the McGill University, Montreal, for the year 1879, has just been issued, printed by permission of His Excellency the Governor General, visitor of the University. It contains much interesting matter, indicative of the rapid growth and present prosperity of the University. A quarter of a century ago it held a very humble position with few students, few Professors, and scanty means, and it was hard to say whether the Professors or the students were the most numerous. Only those who know what it was *then*, and see what it is *now*, can fully appreciate how much of its present unprecedented prosperity is due to the talents and wise administration of its present Principal, to his world-wide reputation as a scholar in his own department, and enthusiasm and success as a teacher. It was indeed a new era for the Institution when Dr. Dawson entered on the duties of the Principalship, twenty-five years ago. It is no small matter too, in these days of doubt and infidelity, when men "are carried about with divers and strange doctrines, through philosophy and vain deceit," that such an Institution should be presided over by a gentleman not only of acknowledged ability and success in scientific pursuits, but also of well-known earnest piety, with all the weight of the highest moral character to influence the young men studying in the different facutlies of the University. Parents can with more confidence send their sons to study at such an Institution without fear of their religious principles being unsettled.

The following statistics amply testify to the popularity of this Institution: During the current session, the students have been, in Law, 77; Medicine, 164; Arts (undergraduates), 93; Partial and occasional, 52; Applied (undergraduates), 19; Partial, 11; Total, 416; or deducting students entered in more than one faculty, in all 412. The Teachers in training in the McGill Normal School number 137, and the pupils in the Model School of the Normal School amount to 343. Including these and the students in the affiliated Colleges of the University, the numbers receiving educational benefits from the University figure up to 929. About 320 of the students and teachers in training in McGill College and the Normal School are from a distance, attached to the city by the educational advantages of the University and its affiliated Institutions. At the meetings of Convocation held in March and May last, the following degrees were conferred: Doctors of Law, Honorary, 2, In course, 2; Doctors of Medicine, 37; Masters of Arts, In course, 3, Ad eundem, 2; Bachelors of Civil Law, 21; Bachelors of Arts, 11; Total, 78. There are many other matters mentioned in the Report, worthy of notice, did time and space allow, which might be inserted with interest in the JOURNAL, and which may be referred to on a future occasion. The progress made by the University during the past quarter of a century may in the words of the Report be summed up as follows: "1st. A body of nearly 1200 Graduates sent forth into the active work of life in all parts of the Dominion, and many of whom have already risen to high positions in the Church, in the Government, in professional life, and in scientific, literary and educational work. 2nd. The establishment of the new faculty of Applied Science, and the complete organization of the other faculties, with a staff of 34 Professors and Lecturers actually engaged in the work of instruction, of whom six are gentlemen of eminence in their departments, introduced to this country through the Agency of the University, and nineteen are graduates of the University, trained in our own halls, though some of them with the additional advantage of study pursued abroad. 3rd. The establishment of the McGill Normal School, which has conferred so important benefits on education by sending forth more than 800 teachers into our schools. 4th. The connection with the University of six Affiliated Colleges, all of them deriving benefit from it, and carrying on an important educational work of their own. 5th. The successful institution of University School Examinations, which, if at present only on a small scale, must eventually constitute a powerful lever for the elevation of education. 6th. The accumulation of considerable endowments of Chairs, of Scholarships, of Medals and Prizes, the completion of the College buildings in such a manner as to permit the work of higher education to be carried on satisfactorily in the faculties of Arts and Medicine, though the other faculties are still unprovided; and the accumulation of large collections of valuable physical and other apparatus, of extensive collections in Natural History and of a valuable Library."

MANITOBA.

The regular quarterly meetings of the Board of Education and the University Council were held on the 4th ult. The Board appointed a committee, consisting of the Bishop of Rupert's Land, the Archbishop of Boniface, Rev. W. Cyprian Pinkham, A. A. C. Lanviere, M. P. P., Rev. J. Robertson, A. Kittson, M. P. P., Stewart Maloy, and E. W. Jarvis, to consider amendments to the school laws of the province, with the view of bringing them forward at the next session of the Legislature. The meeting of the University Council was largely attended, and there was a considerable amount of business transacted.

A letter was read from the General Council of Medical Education and Registration of the United Kingdom stating that the previous examination of the University of Manitoba is recognized as sufficient to enable persons to be recognized as medical students in connection with that body, and the Board of Studies to whom the letter was referred was instructed to communicate with other universities in the Dominion, with regard to their acceptance of our examinations.

With regard to the medals promised by His Excellency the Governor-General, it was decided that the silver medal be given to the student passing the best examination in the honor course for B.A., and the bronze medal to the most successful student in the previous examination.

The Council decided that the B.A. hood should be made of stuff, bordered with the usual rabbit skin and having a green silk cord, as distinctive of the University of Manitoba. The Board of Studies was requested to report upon a form of words to be used at the ceremony of conferring degrees.

The Protestant section of the Board of Education has recently sanctioned the plans and specifications for a new brick veneer school house for the south ward, Winnipeg, submitted by the city trustees. The architect is Mr. C. A. Barber, and the building it is thought will cost between $3,000 and $3,500. Mr. S. C. Briggs, B.A., has been appointed Inspector of Public Schools for the city of Winnipeg for the current year.

The Board of Education is laying off an unusually large number of school districts, and new school houses are in course of erection in many localities.

Readings and Recitations.

THE TWO GLASSES.

There sat two glasses, filled to the brim,
On a rich man's table, rim to rim;
One was ruddy and red as blood,
And one was clear as the crystal flood.
Said the glass of wine to the elder brother,
"Let us tell the tales of the past to each other;
I can tell of banquet and revel and mirth,
And the proudest and grandest souls on earth
Fell under my touch, as though struck by blight,
Where I was king, for I ruled in might.
From the height of fame I have hurled them down.
I have blasted many an honored name;
I have taken virtue and given shame;
I have tempted the youth with a sip, a taste,
That has made his future a barren waste.
Far greater than any king am I,
Or than any army beneath the sky.
I have made the arm of the driver fail,
And sent the train from the iron rail;
I have made good ships go down at sea,
And the shrieks of the lost were sweet to me;
For they said, 'Behold how great you be!
Fame, strength, wealth, genius before you fall,
And your might and power are over all.'
Oh! ho! pale brother," laughed the wine,
"Can you boast of deeds as great as mine?"
Said the water glass, "I cannot boast
Of a king dethroned or a murdered host;
But I can tell of a heart once sad,
By my crystal drops made light and glad;
Of thirsts I have quenched and brows I have laved;
Of hands I have cooled and souls I have saved.
I have leaped the valleys, dashed down the mountain,
Flowed in the river and played in the fountain,
Slept in the sunshine and dropped from the sky,
And everywhere gladdened the landscape and eye.
I have eased the hot forehead of fever and pain;
I have made the parch'd meadows grow fertile with grain;
I can tell of the powerful wheel of the mill;
That ground out the flour and turned at my will,
I can tell of manhood debased by you,
That I have lifted and crowned anew.
I cheer, I help, I strengthen and aid;
I gladden the heart of man and maid;
I set the chained wine-captive free,
And all are better for knowing me."

These are the tales they told each other,
The glass of wine and its paler brother,
As they sat together, filled to the brim,
On the rich man's table, rim to rim.

THE SCHOLAR'S SWEETHEART.

BY EDGAR FAWCETT.

All day he toils with zeal severe
On something learnedly polemic.
From Harvard he returned last year,
With bounteous honors academic.
His parents name him but in praise,
His little sisters quite adore him,
And all the loving household lays
Allegiance willingly before him.

What forms his labor week by week?
They could not understand—oh, never!
'Tis something eminently Greek,
'Tis something eminently clever.
But still his task, unfinished yet,
He shapes with industry unflagging,
And writes his treatise that shall set
The heads of noted pundits wagging.

Is it of Homer's doubtful lines?
Or yet some question, subtly finer,
Of whether certain famous wines
Were first obtained from Asia Minor?
Is it of dialects impure?
Is it some long-sought rule of grammar?
Is it old Sanscrit roots obscure?
Is it that wearisome digamma?

But whether this, or whether that,
Through fragrant fields, when work is ended,
While darkly wheels the zigzag bat,
And all the west is warmly splendid,
He steals to meet in loving wise,
With eager steps that do not tarry,
A rosy girl, whose shining eyes
Grow tender as she calls him "Harry."

What altered thoughts can she awake,
This pearl of sweethearts, best and fairest!
And what a contrast does she make
To "Comments on the Second Aorist!"
So strongly round him can she throw
Her dazzling spells of sweet retention,
'Tis doubtful now if he could go
Correctly through his First Declension.

For while near mossy meadow bars,
With spirit thrilled by sacred pleasures,
He lingers till the dawn of stars,
He lingers by the girl he treasures.
This grave young scholar scarcely knows
If Hector was a fighting seaman,
If lofty Pindar wrote in prose,
Or Athens lay in Lacedæmon!

—*Harper's Magazine.*

Official Department.

ONTARIO.

The success of the former regulations of the Minister of Education in utilizing High Schools for securing the satisfactory literary and scientific qualifications of intending teachers, and in confining the Normal Schools to their proper professional work, and creating facilities in every county for the like kind of training in the County Model Schools, have recently been extended so as to produce complete uniformity in the non-professional examinations of candidates for second and third-class certificates, in requiring that, after July next, all candidates for third-class certificates shall successfully pass the subjects prescribed for the intermediate examination in the High School, and that the County Boards of Examiners shall be relieved in the future from examining candidates of this class, excepting in so far as to their professional standing at the County Model School. This will relieve the County Councils from a large part of the expense attending the County Boards. The University course has been taken advantage of in order to supply equivalents by its examinations for first-class certificates of the higher grades "A" and "B," and for such first-class certificates the University course is now made quite as available for securing the high literary and scientific attainments required of teachers before they can obtain a first-class certificate of grade "A" or "B." Advantage is not only taken of the curriculum of all the colleges possessing University powers in this Province, but has been extended to the University of McGill College, at Montreal, to which so many students in the eastern part of Ontario are in the habit of resorting for superior education. (The Minister of Education has recognised the educational usefulness of this University in also extending to its graduates the eligibility of becoming a Public School Inspector.)

The practical results of these new regulations will probably be to relieve the Normal School, at Toronto, from the necessity of continuing its first division for giving general instruction to candidates for first-class certificates, and thus leave all the energy of the teaching staff for the professional instruction of candidates for second-class certificates.

The following are the regulations referred to above, which are all ratified by Orders in Council, dated March 20, 1880:

NON-PROFESSIONAL EXAMINATIONS FOR FIRST A. AND B. CERTIFICATES.

I. A candidate must obtain first-class grade C. before proceeding to grades B. or A., when such candidate may take options in either of the two following departments, namely:

1 Department of English language and literature, with history and geography.

2. Department of mathematics.

II. The Department will also accept the following examinations according to the curriculum of the honor courses prescribed by the University of Toronto, or the curriculum of equal standard in any college possessing University powers in the Province of Ontario, or in the University of McGill College, of Montreal, as equivalents, as hereinafter mentioned, namely:

1. Any candidate who shall have passed the examination for the first year as prescribed in the said curriculum, and shall also have obtained first-class honors in any of the departments of mathematics, classics, or

modern languages, shall be considered as having passd the non-professional examination of the Education Department for first-class certificate, grade B.

2 Any candidate who shall have passed the examination for the second year prescribed in the said curriculum, and shall also have obtained first-class honors in one of the departments of classics, mathematics, or modern languages, shall be considered to have passed the non professional examination of the Educational Department for first-class certificate, grade A.

3. Any candidate who shall have passed the examination prescribed for the second year in the said curriculum, and who shall also have obtained first class honours in one of the departments of natural sciences, or of mental and moral science and civil polity, shall be considered as having passed the non-professional examination of the Education Department for a first class certificate, grade B.

4. Any candidate who shall have passed the third year's examination prescribed by the said curriculum, and shall also have obtained first class honours in either of the said departments of natural sciences, or of mental or moral science and civil polity, shall be considered as having passed the non-professional examination of the Department for a first-class certificate, grade A.

5. The foregoing shall take effect after the July examination of the present year.

NON-PROFESSIONAL EXAMINATIONS FOR THIRD-CLASS CERTIFICATES.

1. The regulations now in force for the non professional examination for third-class certificates are continued in force so as to apply to the examinations to be held in July, 1880.

2. After the non-professional examinations to be held in July, 1880, every candidate in order to become entitled to a third-class non professional certificate must successfully pass the subjects prescribed for the Intermediate Examination in High Schools, according to the general regulations of the Education Department prescribed for such Intermediate Examination; and the examinations for third class non professional certificates before the county boards shall thereafter be discontinued, and all the regulations with respect to the Intermediate Examinations shall be held to apply to the In ermediate Examination thenceforth substituted for the non-professional third-class certificates.

QUALIFICATION OF PUBLIC SCHOOL INSPECTORS.

The regulations under which certificates of eligibility for Public School Inspectors may be granted to honor graduates in the Faculty of Arts in any of the Universities situate in this Province upon the conditions therein mentioned, are hereby extended so as to include also similar graduates who may take the like Degree in the University of McGill College, at the city of Montreal, upon the like conditions as are imposed by such regulations.

The Legislative apportionment of thirty-three and one-third per cent. on maps, apparatus, prize and library books, etc., will be discontinued on 31st December, 1880.

ALEX. MARLING,
Secretary.

NOTES AND QUERIES.

J. P. H.—The chemistry for second class non-professional certificates is combustion. The structure and properties of flame. Nature and composition of ordinary fuel. The Atmosphere, its constitution, and effects of animal and vegetable life on its combustion. Water, Chemical peculiarities of natural waters, such as rain river, spring and sea water. Hydrogen, Oxygen, Nitrogen, Carbon' Chlorine, Sulphur, Phosphorus, and the more important compounds. Combining properties by weight and by volume. Symbols and nomenclature.

J. B., *Whitby.*—The holder of a First C. will not require to submit to a professional examination for 1st A. or B.

STUDENT.—The percentages for 2nd A. and B. respectively are 60 and 50 per cent. on each group, and 35 and 30 on each individual subject. The limit in Algebra is Easy Quadratics.

C. C.—Roscoe's Chemistry is authorized. For limit see above.

The work for 2nd class candidates in History is Leading events of English and Canadian History, also of Roman History to the end of the second Punic War.

SUBSCRIBER.—Candidates may write for their non-professional and professional certificates at different times.

A candidate may receive a 1st A. or B. non-professional before passing his professional examination for First Class.

Hamblin Smith's proofs will be accepted.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

EAST LAMBTON.—The regular half-yearly meeting of the East Lambton Teachers' Association was held at Watford on Thursday and Friday, 18th and 19th February. *Thursday.*—On motion duly seconded, Messrs. Donaghy, White, Sinclair and Ferguson were appointed a committee (with power to add to their number) to draft resolutions in reference to monthly examinations. The President in an ably written paper discussed the subject of home exercises, urging the value of such exercises as means of training pupils to habits of independence and self-reliance. A discussion of the subject followed, which was taken part in by Rev. Mr Colwell and Messrs. Tulloch, White and Moshier, who all recognised the importance of giving such exercises as those referred to. Dr. McLellan, High School Inspector, was introduced by the chairman, and was greeted with hearty applause from the audience. The Association was addressed at some length by the distinguished gentleman mentioned, on "How to to teach Euclid to Beginners." In course of this address very many useful hints were given to teachers respecting the teaching of this important subject. Mr. R. C. Whittet was appointed auditor for the Association, in room of Mr Pierce. Prof. Harrison gave a lesson on elocution from 1:30 to 3:00. It is sufficient to say that the professor contrived to maintain unflaggingly for that time the interest of the audience, and to give teachers a great deal of useful information concerning the management of the voice, emphasis, inflection and other elements which go to make good reading. The discussion on "How to Teach Euclid to Beginners," which had been adjourned from the forenoon session, was resumed and taken part in by Dr. McLellan and several members of the Association. At this stage of the proceedings Prof. Harrison recited "Barbara Freitchie." His recital of this affecting little poem was received by the audience with hearty and well-merited applause. A paper on "Fourth Class Literature" was read by Mr. Duncan. The discussion which followed the reading of this paper was taken part in by Messrs. Mitchell, Whittet, Moshier, Morris, Stirret, McKeown, Ferguson, White, Norton and the President. *Friday* —The meeting opened at 9 o'clock a.m, the President in the chair. Mr. W. E. Norton read a carefully prepared paper on Object Lessons, urging their very great educative value, and the importance of teachers devoting considerable part of their school-time to the teaching of them. After the reading of this paper some remarks were made on the subject of it by the President, Messrs. Whittet, White and others. Dr. McLellan showed his method of teaching Arithmetic to Beginners, and gave many useful hints as to how the elements of that important subject should be taught. This address was followed by one on "The Use of the Calculator," by Mr. J. S. Carson, I. P. S. for West Middlesex, who showed how very useful that instrument may be in the teaching of the fundamental rules of arithmetic when manipulated by a skilful teacher. Mr. Carson has the faculty of evoking a lively discussion on any subject which he introduces, and this time his remarks called to their feet in quick succession Messrs. Ferguson, Norton, Moshier, Hagel, Whittet, White, Newcombe and Dr. McLellan. The bone of contention was: "Which shall be taught first—Long Division or Short Division?" Dr. Harvey, of Watford, read a paper on "The Preservation of Pupils' Health," in which he dwelt very strongly on the necessity of proper ventilating apparatus in schools, of care with respect to the cleanliness of the persons and clothing of pupils, and on giving directions to them as to the proper kinds of food and exercise. The address was an excellent one, and gave evidence of careful thought and preparation Mr. W. E. Norton read the report of the committee appointed to draft resolutions anent monthly examinations. The resolutions, which were discussed *seriatim* and adopted, were as follows: 1. That the papers for the next examination be sent to teachers, so that the examinations may be held on the last three teaching days in April. 2. That examination papers be prepared for fifth classes. [NOTE.—This is a "new departure," papers hitherto having been prepared for no class higher than the fourth.] 3. That in the opinion of this Association it is not advisable for teachers to change schools at examinations. (This is opposed to a resolution passed at a former meeting of the Association, and this latter was therefore rescinded.) 4. That third classes in analyzing sentences be required to divide them according to the extended scheme of analysis. 5. That the papers for the next examination be prepared by a committee consisting of Messrs. A. E. Wallace, M. Ferguson, T. White, W. E. Norton, and R. C. Whittet. Dr. McLellan gave a lesson in Algebra, illustrating by solutions some important principles, by the application of which the working of problems by what he characterized the "brute force method" is avoided. Prof. Harrison gave a short lesson in elocution, showing the manner in which Poe's "Bells" should be rendered. Dr. McLellan, at the earnest request of the Association, gave an address on "The Teacher's Work." On the evening of the 19th ult. a public meeting was held under the auspices of the Association in the C. M. church, Watford. The church was comfortably filled, Mr. Fawcett occupied the chair, and discharged his duties with much urbanity and geniality. During the evening Prof. Harrison gave several

readings, which were rendered in a masterly manner. The Professor sent the audience into perfect convulsions of laughter by his reading of "Our Pants." Dr. McLellan delivered his lecture "This Canada of Ours." This was certainly one of the most successful meetings of this Association. Mr Barnes, I.P.S , was re-elected president of the Association; Mr Thos. White, re-elected Vice-President; Mr. J. McD. Duncan, re-elected Sec.-Treas. ; Mr. Jno. Pierce and Mr. R. C. Whitet elected auditors. The next meeting is to be held in Forest. Mr. Miles Ferguson, Principal Forest Model School, was appointed a delegate from this Association to the Provincial Association, which meets in Toronto in August.

NORFOLK.—The Teachers' Institute for the County of Norfolk was held on Friday and Saturday last. The total number registered was 113. Mr. W. F. Cron took up the subject of map drawing. It had the great advantage of teaching through the eye of the pupil. The best form of teaching a class of children what geographical terms meant was of course to take the class out for a walk and let them study from nature; but this plan was not always convenient and was open to misconstruction by the public. Map drawing was the best substitute. He denounced the practice of tracing through semi-transparent paper as useless. If a correct map were required, it would be best to have the lines of latitude and longtitude drawn first, but freehand drawing of maps was exceedingly useful. In painting maps, pupils usually make the paint far too thick. The names should be put on in characters as near like print as possible, not in writing. Mr. W. W. Pegg delivered a lecture on the teaching of reading to pupils. The speaker seemed to enter heartily into sympathy with the method of teaching word forms first and the alphabet incidentally. His form differed in one important respect from that of most who had attempted the method, in that he used the blackboard to a much greater extent. Thus he invented lessons of an original character, and "printed" them on the board while talking to the class; in fact, the pupils supplied the ideas and he wrote the signs. In this way a lively interest in word forms was excited among the pupils. This was in addition to the ordinary lessons from the tablets and books. He found that this method not only taught word forms rapidly, but also correct enunciation and natural expression. It also made a class remarkably thorough and intelligent. His pupils copied the lessons on their slates. *Afternoon Session.*—Mr. W. H. Weston, of Waterford, delivered an admirable lecture on Algebraic Factoring Dr. Wadsworth then took up the subject of "Home work for pupils and teachers." He claimed that few students could work more than six hours a day if the work was really genuine. In a school which was energetically managed, the evils of over-work were apt to appear. Children were forced to perform tasks which overtaxed their strength and stunted their future physical and mental development. The difficulty was that the talented and active children were the very ones who were most injured by the forcing or hot-bed system, while the constitutionally indolent were not greatly benefitted by it. Mr. A. J. Donly, of Simcoe, then read an essay on the "School System of Ontario," which was listened to with marked attention. *Evening Session.*—At 8 p.m., the Association met at the Mechanics' Hall. Mr. A. F. Butler, B. Sc., Public School Inspector, of Elgin, addressed a large audience on the Kindergarten. The lecturer gave a delightful biographical sketch of Frederick Froebel, the distinguished inventor of the Kindergarten system. He explained the means adopted to develop harmoniously and pleasurably the faculties of young children. The leading principles were two—that children learn by doing, and the children love to do. All that was needed was proper direction—not repression. In fact, repression was foreign to the systen. Rev. D. L. Brethour, of Simcoe, then delivered an address on Education. His strongest point perhaps was the necessity for the co-education of both mind and heart. *Morning Session.*—On Saturday the Institute was addressed by Mr. Butler, on Arithmetic. An Essay entitled "Hints to Teachers" written by Mrs. Dorothea Smith, of Woodhouse, was then read by the Inspector, and a hearty vote of thanks accorded to the lady who composed it. The following officers were elected for the coming year: President, W. W. Pegg, Esq., ; Vice-President, Jas. Lumsden, Esq., M.A., ; Secretary, Rev. G. Grant, B.A., ; Recording Secretary, W. F. Cron, Esq., ; Executive Committee, Messrs. Weston, Bennett, Knowles, Payne, Fisher and the School Inspector Auditors, James Fulton and D. W. Parsons. The auditors for 1879 read a statement showing that the balance at the credit of the Association amounted to $70.75. A resolution was passed condemning the proposed shortening of the Public School holidays. *Afternoon Session.*—Mr. Robert Grant, Model School Master, of Welland, then addressed the Institute on "Object Lessons." The address was a well-considered and well-delivered effort, and fully explained the principles regulating the subject. R. T. Livingstone, Esq., B.A., was then introduced, and gave a series of readings from Dickens and other authors, to the intense delight of the audience.

NORTHUMBERLAND.—The semi-annual meeting of this Association was held in the Collegiate Institute, Cobourg, on the 26th and 27th ultimo. Mr. D. J. Johnston, a valued member of the Association, having retired from the active work, was elected an honorary member, and invited to take part in the proceedings. The early part of the session was given to Algebra, the discussion being opened by W. S. Ellis, B A., Mathematical master of the Institute A vote of thanks was tenderred Mr. Ellis for his very able presentation of factoring. A discussion followed on School Discipline, the prevailing feeling being in favor of a judicious use of the rod in certain cases; but that, as far as possible, pupils should be swayed by love, rather than by fear of corporal punishment. In the evening, a very excellent lecture was delivered before the Association by Dr. Burwash, on "Schools and School Masters." On Friday, the subject of Reading was discussed, introduced by some excellent remarks from Mr. W. E Sprague, followed by Mr. Ash and others. An able and critical analysis of Gray's "Elegy" was given by Mr. R. K. Orr, B A., Head Master of Brighton High School. A discussion followed on the subject of literature for Third-Class teachers, the unanimous feeling being against the present requirements, and in favor of making the work somewhat similar to that required for second-class certificates, confined to one or two authors, and less fragmentary and discursive. The subject of Penmanship was very ably presented by M. Sawyer, a student of the Institute. He was succeeded by Mr. D. C McHenry, M. A., in a practical address on "Waste of Labor in School Work." The subject was further discussed by the Inspector, Messrs. Ellis, Sprague, Johnston, and others. The Association requested Mr McHenry to publish his address. Mr. W. M. Scarlett next took up the subject "History in Public Schools." He advanced some excellent ideas, particularly in reference to introducing the study to young pupils. He was requested to publish his address. A general "Question Drawer" exercise followed, including many practical questions, eliciting a very general discussion. On Friday evening the large Audience-room of the Institute was filled with an intelligent audience, to witness a series of chemical experiments, by Messrs. Oldham and Ellis, of the Institute. Mr. A. P. Coleman, Science Master, who was prevented by illness from taking an active part, stated that the experiments were those ordinarily performed by the members of his Intermediate Class. A hearty vote of thanks was presented to the gentlemen who had thus entertained the Association. The very superior "Glee Club" of the Institute were present during the entire proceedings, and greatly contributed to its success by their excellent music. The taste of the students in decorating the room elicited the admiration of all present. The President, Mr. W. E. Bartlett, conducted the business with his usual ability and tact. The Association adjourned, to meet in Cobourg in October next.

GLENGARRY.—The first half-yearly meeting was held in Alexandria on the 12th and 13th ult. Seventy members at present in charge of schools were in attendance. A good part of the time was devoted to the Limit Table of Studies prescribed for Classes I, II, III, and IV, as laid down on page 1 of the General Register. The subjects of the papers read and addresses given were "Duties of Teachers to Parents and Pupils," "High School Entrance Examinations," "Scanning of English Verse," "Art of Teaching," "Botany," "Elementary Chemistry." "Reading," "School Registers, Trustees' Returns, and Departmental Regulations," "Recitations," and, besides. the practical teaching of classes. The following officers were appointed for the current year: President, Dr. McDiarmid, Supt. Pub Schools; Vice-President, Alex. Kennedy, H. M. Model School; Secretary, Arch. B. McDonald; Librarian, Alexander McDonell; Directors: Alexander B. McDonald, J. C. McCabe, R. Seldon, John A. Shea, Wm. C. Gorsling. The next meeting will be held on the 2nd and 3rd of September next. ARCH. B. MCDONALD, *Secretary.*

HALIBURTON.—The semi-annual meeting of the County Teachers' Association was held at the village of Haliburton on the 19th and 20th Feb. The following is the programme followed:—Thursday—Opening address by Dr. Curry President of the Association, on the "Relation of Teachers to Trustees, Parents, and Pupils"; Object Lessons, Mr. W. Leith; Object Lessons on Paper, Mr. T. T. Grimmett; Infinitives and Gerunds, Mr. E. J. Unger; How to make Study Attractive, Mr. G. S. V. Houston; Geography, Mr. T. T. Grimmett. In the evening, the Rev. Mr. Strachan delivered an address on Canada to a large and highly appreciative audience. Friday—Music, Mr. Geo. Goward; Reading to Senior Classes, Mr J. S. K. Angus; Third Class Algebra paper, Mr. T. T. Grimmett; Duties and Influence of Teachers, Mr. E. C. Young; Question Drawer. CHAS D. CURRY, B.A., M.D , *Pres.*; E. J. UNGER, *Sec.*

Publishers' Department.

The House of E. B. BENJAMIN, of New York City, whose advertisement appears in our columns, is the oldest in that line of business, and one of the most reliable in the United States.

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the manufacturers in Europe enables him to offer better terms than any other house in the trade. Schools and other institutions requiring Chemical and Physical apparatus would confer a favor by sending for one of his catalogues before purchasing elsewhere.

REVIEWS.

PLANE TRIGONOMETRY AS FAR AS THE SOLUTION OF TRIANGLES; *by J. B. Cherriman, M.A., late Fellow of St John's College, Cambridge, &c., &c.* FOURTH EDITION, *with numerous examples and Logarithmic Tables Edited by Alfred Baker, M.A., Mathematical Tutor, University College, Toronto. Toronto: Copp, Clark & Co.*

A want long felt by the student has at length been supplied by the publication of the above text-book. The original text by Prof. Cherriman, though quite practical, in that it approached by the shortest method the solution of triangles, was not quite as comprehensive as might have been desired. This point has been thoroughly attended to in Mr. Baker's edition, in which the additional matter has been worked into the various parts, in which it was required, in the shape of explanations, including the papers set at the University Matriculation and First Year Examinations. The whole forms a very neat and compact volume, and the publishers are to be congratulated on its appearance.

We must not fail, however, to notice the tables of Logarithms, which conclude the work, and which are compiled in so brief a space that they must be of great advantage for ordinary calculation.

The Trigonometry will form an excellent text-book for those preparing for the Matriculation and First Year Examinations, for the Examinations in Engineering, and those required for the Provincial Land Surveyors of Ontario

OUR HOMES. By Henry Hartshorne, A. M., M. D. Pp. 150, 12mo.—Philadelphia: Persley Blakiston, 1880 This excellent little work is the ninth of the series of American Health Primers. It treats in a popular and readable style of the placin··, constructing, lighting, warming, ventilating, water-supply, draining, and disinfecting of dwellings, with special reference to the climatic and other conditions of this continent. There are, besides, chapters on population and workingmen's homes. Much valuable information is given, and the practical suggestions seem judicious. The great prevalence of typhoid fever, a preventible disease, in the rural districts as well as the towns of this country, shows how much our people are in need of instruction in these matters. The authors and publishers of books such as this, which aim at giving, in a cheap form, the conclusions reached by the students of sanitary science, deserve the thanks and the pecuniary support of the public.

REMNANTS OF EARLY LATIN. Selected and explained for the use of students by Frederick D. Allen, Ph. D., Professor in Yale College. Pp. viii. and 106, 8vo. Boston: Ginn and Heath, 1880. This is a small but scholarly treatise, calculated to be very useful to students of Latin and philology, and likely to be read with delight by all taking an interest in those subjects, who happen to become acquainted with it. It contains a short introduction, dealing with the peculiarities of early Latin, spelling, inflexion, and versification, and a selection from inscriptions and literary sources, of those "remains of the earliest Latin as are most important as monuments of the language." We have found many of these "remains" interesting, on account of their matter as well as their linguistic form, and can speak in high terms of the fulness and goodness of the notes. The work is well printed, and may be said to be creditable alike to American scholarship and typography.

ELEMENTARY LESSONS IN ENGLISH. Boston: Ginn and Heath. This work is written by Professor W. D. Whitney, of Yale College, and Mrs. N. L. Knox. It is in two parts. Part I. contains *no technical Grammar*. It is designed to give children such a knowledge of the English language as will enable them to *speak*, *write*, and *use* it with accuracy and force. It is made up of exercises to increase and improve the vocabulary, lessons in enunciation, pronunciation, spelling, sentence-making, punctuation, the use of capitals, abbreviations, drill in writing gender and number forms, and the possessive form, letter-writing, and such other matters pertaining to the art of language as may be taught simply, clearly, and profitably. Many and varied oral and written exercises supplement every lesson. Part II. is an introduction to the "Essentials of English Grammar." It is a most excellent work. The same publishers have issued a *Teachers' edition*, containing the text and valuable suggestions for developing the lessons.

BRAIN WORK AND OVERWORK. Philadelphia: Presley Blakiston. This is No. 10 of the American Health Primers. It discusses in a plain, straightforward manner the causes of nervous exhaustion, and the natural processes for the restoration of nerve force. The author is not an extremist or a mere theorist. He takes a common sense as well as a medical view of the questions he takes up. Teachers will find it of great use in enabling them to teach practical hygiene to their pupils.

ORATORY AND ORATORS. By Wm. Mathews, LL D., Author of "*Getting on in the World*," "*The Great Conversers, and other Essays.*" "*Words; their Use and Abuse*," "*Hours with Men and Books*" Chicago: S. C. Griggs & Co. $2.00. This is a complete cyclopedia of all that pertains to elocution, gesture, &c., and is arranged in an admirrble manner. It contains numerous standard selections for declamation, in addition to the very valuable chapters on the theory.

FIRST YEARS IN SONG LAND. Root and Son, Chicago. This contains over three hundred songs for imitation practice, songs for the study of notation, songs for recreation, and songs and hymns for special occasions It is specially adapted for day schools and juvenile classes. The book contains well graded lessons, with very clear instructions for teaching the subject.

HALF A HUNDRED SONGS. Davis, Bardeen, & Co., Syracuse, N.Y. These were written by a teacher for use in her own school. She selected popular airs and adapted the words to them. They are very well written, and are appropriate to the various events of school life.

RODERICK HUME. Davis, Bardeen & Co., Syracuse, N. Y. This is a story of a New York teacher, written by Mr. C. W. Bardeen, Editor of the *School Bulletin*. Mr. Bardeen has evidently been a most observant man, not merely of what goes on inside the school room, but of all the outside influences connected with the teacher's work. Most teachers will recognize the characters as old friends or foes. They will meet the different kinds of trustees, the ignorant, the officious, the intermeddling, the men who have relations in the teaching profession, the men who *are* trustees merely for the advantages their positions may throw in their way, and the good, practical, common-sense man who believes the well-trained teacher to be the best judge in matters relating to his own business. Teachers of many varieties meet the reader, some deserving of esteem for the qualities of their heads and hearts, some exhibiting traits of character not to be admired. The lamentable fact that teachers are not true to each other receives a clear illustration. Election contests, school-book agents, the intense rivalry of too many neighboring towns, and other weak points of the school system are faithfully portrayed. Teachers cannot fail to be greatly benefitted by reading the book. Roderick's address to his pupils is a compendium of the best points in the highest kind of school management. Miss Duzenberrie's victory and Vic Blarsten's closing remarks ought to teach lessons of warning to many teachers who are even the most in earnest about their work. Mary Lowe is a beautiful model of a teacher, and no one will be surprised that Roderick should make her his helpmeet instead of his assistant. It is a capital story, and we recommend it strongly to every Canadian teacher. Each one should get a copy for himself, as he will wish to read it more than once.

THE ANALYST, A JOURNAL OF PURE AND APPLIED MATHEMATICS. *Edited and published by J. E. Hendricks, Des Moines, Iowa.* The Analyst, as usual, contains a number of valuable and interesting articles—On the Variation of the Length of the Day, Quaternions, Sphere Cutting, Given Spheres at Same Angle, The Cissoid, Problems with their Solutions. It is well worthy the patronage of Canadian mathematicians.

THE MATHEMATICAL VISITOR. *Edited and Published by Artemus Martin, M.A., Member of the London Mathematical Society, Erie, Pa.* Mr. Martin judiciously divides his journal into Junior and Senior Departments; the former deals with Arithmetic, Algebra, Geometry, Trigo-

nometry, and the more elementary portions of Applied Mathematics; the latter is occupied with questions in the higher branches of the subject. Thus all interested in mathematics will have something to interest them Both departments receive contributions from the best men in the United States. The work is entirely devoted to problems. One of its striking features is its truly admirable typographical execution; each page is a pleasure to look at—a fact which becomes perfectly astounding when, on one of the last pages, we find the following note: "This No. of the *Visitor* has been delayed some months in consequence of the sickness of the editor, who has done all the type-setting with his own hands. He is not a practical printer, and never had set up a stickful of type till last May or June." We strongly commend the *Visitor* to our Canadian mathematicians. It deserves, and we doubt not will obtain, a large circulation. Subscription, $1 00 a year in advance—to be sent to Artemus Martin, Lock Box 11, Erie, Pa.

VICK'S FLORAL GUIDE. The time for gardening is at hand, and the desire for beautiful flower-gardens is largely on the increase. *Mr. James Vick, of Rochester, N. Y.*, has done more than any other man to create this improved taste and supply the means of gratifying it. His annual Floral Guide contains hundreds of illustrations and full directions for the growth and culture of flowers. Those who wish reliable seeds should not fail to order from *Vick*.

THE SCHOOL NEWSPAPER, VOL. VI. Bound Copy. William Collins & Sons, London, Edinburgh and Glasgow. This volume, 1879, makes an interesting and instructive book. It does not discuss professional subjects, but is a compendium of the latest and most entertainlng information and anecdote in the fields of travel, adventure, history, science, and natural history. Teachers who wish to give their pupils attractive information will find a mine in this volume.

A MANUAL OF GOVERNMENT IN CANADA. J. C. Stewart & Co., Toronto. This valuable book is written by D. A. O'Sullivan, Barrister. It contains an historical sketch of the constitution of Canada, the Federal system, the Constitution of the Dominion and its institutions, the Provincial Constitutions and their institutions, the people and their rights, the judiciary, law and the courts, &c. It is, in fact, a compendium of the foundations on which the liberty of a Canadian is based, and, either in its present or a smaller form, should find its way into our High Schools as a text-book.

THE BOYS' WORLD for February, 1880 (published by James W. Allingham, London, Eng.), contains Chaps. IV. to XI. of "Alfred of England, by Brenchly Beaumont, and the concluding chapters of "Warwick," by the same author "Born to Victory," "Timothy Simple," and "Prince Dick of Dahomey," the other serials, are each continued through a number of chapters. Three short stories, "Chased by Wolves," "Homeward Bound," and the "True Story of Mazeppa," together with "Our Comic Kaleidoscope," "Merry Moments," "Half Holidays, how to spend them," and an interesting paper on "Chemistry, its Marvels and Mysteries," and the usual "Notices to Correspondents," complete the contents, forming a full and readable number of the "Paper."

The same publishers send us No. 14 of the "BOYS' WORLD POCKET LIBRARY," entitled "Horatius, or the Dauntless Three," a complete thirty-two page story for one penny; also "THE LADIES' WORLD," for February, which offers the following programme to its fair readers: Chaps. XVI. to XXIII. of "A True British Girl, by Mrs. H. Lewis;" "Daisy's Faith," "Only a Young Man's Fancy," "Lost, but still Loved," and "All for Love," four stories completed in the No.; "Illustrious Women of the World," "Lessons of Mamma-in-law," "Things worth Knowing," "The Amateur Dressmaker," "Varieties," and "Notices to Correspondents."

HARPER'S MAGAZINE opens with a carefully prepared paper on "The New School of Italian Painting and Sculpture," by J. J. Jarves, wherein are to be found some severe criticisms on the low standard of modern art displayed in either of these branches of art. Lieut. Semly, U.S A., furnishes an interesting account of "Life among the Arrapahoes," followed by J. Brander Matthews on "Obstinacy;" a story by C. Moscheles; then Wm. Hamilton Gibson's "Winter Idyl," beautifully illustrated by himself; "Dakota Wheat Fields," C. C. Coffin; "An Irish Wake," J. S. Cloud, and "Vacation Aspects of Colorado," A. A. Hayes, jr., bring us to Chaps. XXIII. to XXV. of "White Wings," by Wm. Black; "Miss Beulah's Bonnet," by Rose Terry Cooke; "Transportation by Railway and Ship Canals," E. H. Derby; "Karin," a Swedish Romance by Gustafson; Chapters XXVIII. to XXXI. of "Mary Annerly," and a comprehensive essay on the "Preservation of Hearing,' by Dr. Sexton. follow each other in quick succession. The Editor's Chat from his 'Easy Chair," with the "Literary and Historical Record," and the Drawer, with five short poems, among which we notice "The Sifting of Peter," by H. W. Longfellow, form the contents for March.

We have received from Strachan & Company the CONTEMPORARY REVIEW, which contains the following articles:—1. Mysteries of Administration in Turkey. 2. A Sequel to "The Pedigree of Man," by Dr. Radcliffe. 3. The Duration of Parliaments, by Walter R. Cassels. 4. The Pillar of Praise, by Emily Pfuffer. 5. Bureaucracy and its Operation in Germany and Austria-Hungary, by Prof. Von Schulte. 6. The Vernacular Press in India, by Roper Lethbridge. 7. Hellenic and Christian Views of Beauty, by the Rev R. St. John Tyrwhitt. 8. Ministerial Misstatements on the Afghan Question, by the Duke of Argyle. 9. Contemporary Books:—I. Ecclesiastical History, &c., under the direction of Archdeacon Cheetham. II. Biblical Literature, &c., under the direction of the Rev and Hon. W. N. Fremantle. III. Modern History, under the direction of Prof. R. Gardiner.

We acknowledge the receipt of the NORTH AMERICAN REVIEW from D. Appleton & Co. It contains the following:—1. McClellan's Last Service to the Republic, part 1, by G. T. Curtis. 2. Relations of Canada with the United States, by Sir F. Hincks. 3 The Failure of the Southern Pulpit, by Rev David Swing. 4. Gen. Grant and a Third Term, by Geo. S. Boutwell. 5. The Irish Land Question, by Chas. Stewart Parnell. 7. Recent Books on Trade and Finance, by Edward Cary. I. Reciprocity, Bi-metallism, and Land-Tenure Reform. II. Free Trade and English Commerce. III. The Financial History of the United States from 1774 to 1789.

We have received from the Leonard Scott Publishing Company BLACKWOOD'S EDINBURGH MAGAZINE, in which are the following articles:—1. Our American Senator on Ireland. 2. Bush Life in Queensland, Part IV. 3. The North-East Passage: Narrative of Lieutenant Palander, Swedish Royal Navy, Commander of the Exploring Vessel (with maps). 4. Reata; or What's in a Name. Part XII. 5. Conviviality. 6. The Afghan War: Passages from the Note-Book of a Staff-officer. 7. Metternich. 8. The Opening of Parliament.

The April ATLANTIC MONTHLY maintains the reputation of the magazine for variety and interest. It opens with the first instalment of a new serial story, "The Stillwater Tragedy," by Thomas Bailey Aldrich, which shows that the right hand of its author has not forgot its cunning. "The Undiscovered Country" is continued; and Rose Terry Cooke furnishes "Clary's Trial," by Whittier, Crasset, Butterworth, Miss Sarah O. Jewett, and two anonymous writers. Harriet Preston writes about Madame Paalzow, under the caption of "A Woman of Genius;" Mr. Lothrop about "Coleridge as Poet and Man;" Mr. Henry C. Angell on the "Records of W. M. Hunt," the painter; and Richard Grant White on "A Canterbury Pilgrimage." There are, also, an additional chapter of "Reminiscences of Washington," which is very readable, and an article on "Republican Candidates for the Presidency," which no one who wishes to understand the present state of politics in the United States should pass over. Reviews of three German novels and Jeffries' Color-Blindness, together with "The Contributors Club," conclude a good number.

The GENTLEMAN'S MAGAZINE is, if we mistake not, the oldest now in existence. At any rate, the March number is the seventeen hundred and ninety first, and is to constitute a part of the two hundred and forty-sixth volume. It is remarkable that not only has it not fallen behind the age, but it has a freshness and life which we look for in vain in many of its young competitors. The contents are: An instalment of 'Queen Cophetua," a very good serial story, by R. E. Francillon; "Health Through Education," an article of great interest to teachers, by Dr. Richardson, the eminent teetotaller and author of Hygiene; "Tails, Limbs and Lungs," by Andrew Wilson, an interesting zoological contribution, illustrated with wood-cuts; "Norman and Saxon Blood Royal," by Thomas Foster, a valuable historical paper; "Voices that are Still," by the member for the Chiltern Hundreds, an entertaining account of the peculiarities of some recently deceased members of the English House of Commons; "The 'Edinburgh Review' and its Contributors," by C. Peabody, based on the recently published correspondence of Mr. Macvey Napier, its second editor; "An Anglo-Indian Poet," by James Payn, which is an amusing review of a volume of English poems lately given to the world by a Parsee; "Love's Dawn and Death," a poem by G. V. K.; and "Table Talk," by the Editor.

ORIGIN OF THE DESERT OF SAHARA.

A M. Largeau in 1874 visited the valley of the Igharghar, with the intention of branching off to Rhadames to study the commerce of that oasis and test the practicability of diverting to Algeria the caravans that come there by the central route from Soodan. He questioned the *chambas* on the causes of the drying of the great Saharan streams, and found that all agreed in saying that these dead rivers once ran full through a country more fertile than the Tell (the region north of the Atlas Mountain's crest), but could only explain it by legends more interesting than satisfactory.

M. Largeau gives the following explanation of the change: "It is known that pastoral people have always been great destroyers of forests, for they need large spaces of ground to feed the flocks that form their wealth, and to promote security against the wild beasts that lurk in forests. Even now the Algerian Arabs are seen firing the woods to enlarge the narrow limits imposed upon them by colonization. So, although the great Saharan streams have not been explored to their sources, yet it is known that they commence on the bare plateaux that are but the skeletons of heights once wooded and fertile. All accounts of the inhabitants of these regions agree on that point. Consequent upon the destruction of the forests, the periodical rains were replaced by rare and short though violent storms, the waters from which, instead of soaking in as in past ages, slip by on the rocky mosses, carrying away the rich surface mold, and bring about the drying of the springs, and, as a direct consequence, of the rivers."—*Lieutenant Seaton Schroeder, in Popular Science Monthly for February.*

Perry & Co's Illustrated List

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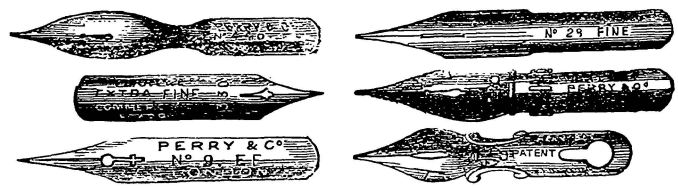

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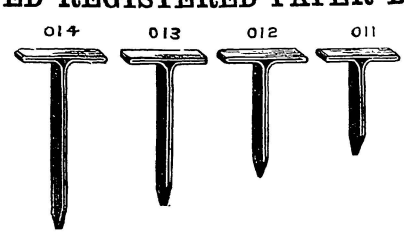

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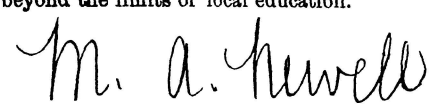

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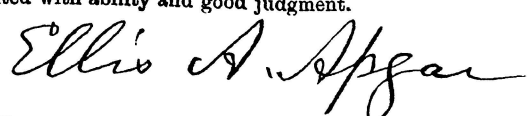

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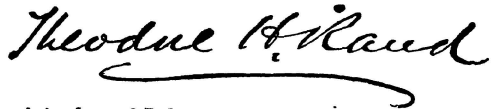

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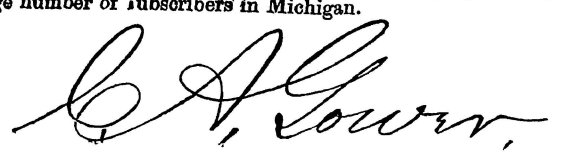

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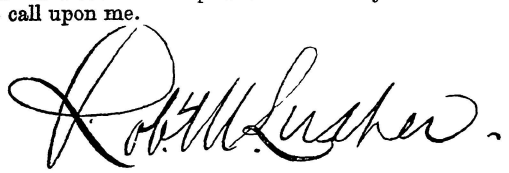

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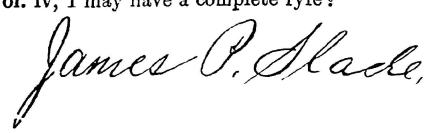

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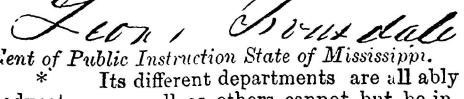

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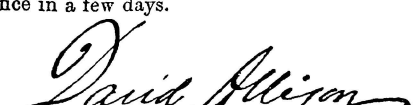

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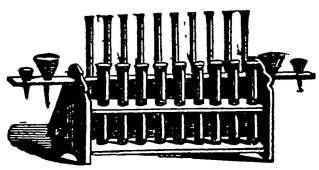

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The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

DOMINION LEGISLATION FOR THE YOUNG.

Among the few measures of a purely benevolent nature before the House of Commons, two relating to children, young persons and women, deserve notice. The first, introduced by Mr. Bergin, M.P., is an elaborate bill of 75 sections, with corresponding schedules, designed "to regulate the employment of children, young persons and women in the workshops, mills and factories of the Dominion of Canada." The first part of the bill regulates hours of labour. Those for children must be only for the first half of each day, or for the whole of alternate days; those for young persons and women shall be from 6.30 a.m. to 6.30 p.m., less two periods of one hour each allowed for meals and rest. Saturday is to be a half day. Where no children or young people are employed the hours for women shall be from 6.30 a.m. to 9 p.m. except on Saturday, when they shall be from 6.30 a.m. until 4 p.m. The time allowed for meals and rest to be four hours and a-half, and on Saturdays two hours. The four usual holidays, and eight half-days in the year, are to be allowed. Provision is made for improved ventilation, drainage, light and air, and treatment in case of infectious disease, as directed by a medical inspector of factories and mills. Precautions are also prescribed in regard to cleaning machinery while in motion, the fencing of fly and water wheels, vats, etc., and the fixing of grindstones securely. The provisions in regard to the attendance of factory children at school are as follows:—

"A. Every child employed in any factory or workshop shall attend the public or common school nearest the residence of such child, unless the parent or guardian of such child shall be a supporter of a separate school, when, and in such case, the child shall attend the separate school of which the parent or guardian is a supporter, as follows:

"1. Every child, when employed in a morning or afternoon set, shall, in every week during any part of which he is so employed, attend on each work day for at least one attendance; and

"2. Every child, when employed on the alternate day system, shall, on each work day preceding such day of employment, attend for at least two attendances:

"3. An attendance shall mean the morning or afternoon period of school hours as fixed by the laws of the Province in which the factory or workshop is situate:

"Provided that

"(a) No child shall be required to attend school on Saturday, or on any holiday or half holiday allowed under this Act in the factory or workshop in which the child is employed:

"(b.) A child who has not in any week attended school for all the attendances required by this section shall not be employed in the following week until he has attended school for the deficient number of attendances, unless his non-attendance has been caused by sickness or other unavoidable cause certified by the school teacher.

"B. After the passing of this Act the owner, manager, superintendent, secretary, overseer, or person in charge of every mill or factory shall, before employing any child therein, obtain from a school teacher a certificate according to one of the forms and according to the directions given in the schedule marked D to this Act annexed, that such child had attended school for at least twenty days and not less than one hundred and twenty hours during one month preceding the employment of such child; and a like certificate shall be obtained on the Monday of each week during which the employment of such child shall be continued in that mill, or factory; and such owner, manager, superintendent, overseer, or person in charge shall keep every such certificate so long as such child shall continue in his employment for two calendar months after the date thereof, and shall produce the same to any Inspector or Medical Inspector when required during such period.

"C. In case of the employment of any child contrary to the provisions of this Act, or for a longer time than is hereinbefore limited and allowed, or without a due compliance with the provisions of this Act, touching the education of children or the certificates of the Medical Inspectors, Police Magistrates, or Justices of the Peace, the parent or parents of such child, or any person having any benefit from the wages of such child, shall be liable to a penalty of not more than five dollars, nor less than one dollar, unless it shall appear to the satisfaction of the Police Magistrate or Justice of the Peace that such unlawful employment has been without the wilful default of such parent, or person, so benefited as aforesaid."

The other bill, introduced by Mr. Richey, of Halifax, is designed to grant protection to children and to prevent juvenile crime. It provides that "persons having the care of children under sixteen years of age shall not allow them to be employed for exhibitions of a dangerous or immoral kind." These exhibitions are defined to be "rope or wire walking, dancing, begging, or peddling, or as a gymnast, contortionist, rider or acrobat," or for "singing, playing on musical instruments, except in churches, schools, etc." The bill further provides that no minors under sixteen years of age shall be allowed to remain in saloons or such places, or in dance houses, dancing clubs or concert saloons, unless accompanied by their parents or guardians. In the case of dancing classes only written permission of the parent or guardian to the manager is sufficient.

Two other bills have been introduced by the Hon. Minister of Justice to facilitate the working of the recent Ontario Acts relating to the Penetanguishene Reformatory for Boys, and the Mercer Industrial Refuge for Girls.

CORPORAL PUNISHMENT.

We would not go so far as to recommend the abolition of corporal punishment in schools. It has its uses in some cases

as a reformatory agent. There is no doubt, however, that the most successful disciplinarian whips least. This view received very clear endorsation in a recent discussion on corporal punishment in the Cincinnati School Board, during which statistics were furnished to prove that "the newest teacher whipped most and the best teacher whipped least." Of all the forms of corporal punishment, probably the most dangerous is the too common one of boxing a child's ears for slight misconduct or neglect of duty. Mr. E. H. Buxton, an energetic member of the London School Board, has recently directed special attention to the matter. He addressed a letter on the subject to Dr. A. Gardiner Brown, one of the surgeons of the London Hospital, to which he received the following reply:

In answer to your letter on the subject of "Boxing Ears," I may say that in 1879 I saw seventeen cases of diseases of the ears at the London Hospital and elsewhere, which undoubtedly were referable to this cause. The condition set up in the ear varies with the force of the blow and the strength of the patient; from a red and tender state of the drum to active inflammatory mischief ending in more or less complete destruction of the organ. The cases were mostly males, and I am persuaded that there are many others due, though not attributed, to the same cause. Those who have the care of the young, cannot be too strongly impressed with the mode of punishment in question. I would, therefore, suggest that some regulation be adopted by the School Board for London, warning teachers not to "box" their scholars' ears, imposing as the penalty, if it be continued after the second or third admonition, either suspension for a time, or dismissal. The actual case in point is that of a boy (æt. 11), from whose ears you witnessed the operation of removing a polypus, due to injury at one of our Board Schools, inflicted by "boxing" his ears for "dulness"—a nice remedy for such a complaint.

Well may the surgeon say, "A nice remedy for such a complaint"! How any teacher who claims to be a rational being, can whip for dulness, is beyond comprehension.

GEOGRAPHICAL NOTES.

SKETCH OF EFFORTS TO EXPLORE A NORTH-EAST PASSAGE.

The history of the efforts to explore the north-eastern Arctic Seas of Europe are most interesting. They were chiefly connected with the discovery and exploration of the island commonly known as Nova Zembla, or New Land,—a counterpart of the Island of New Foundland, on the north-east coast of America.

Nova Zembla consists of a vast island cut in two—one-third lying southward and two-thirds northward between the 70th and 77th parallels of north latitude, and between the 51st and 69th meridians of east longitude. They are together nearly 400 miles in length and about 50 broad. The islands are separated by a remarkable strait or passage, with sharp windings, over 60 miles in length by about one mile in width. It is bounded on either side by high hills and steep precipitous cliffs The former are noble fjelds towering in majestic solemnity from 3,000 to 4,000 feet above the sea level.

Nova Zembla was first discovered in 1553, by Sir Hugh Willoughby, whose sad fate has always caused a shudder. Having sighted Nova Zembla, he sailed further north and then south, and finally put into a Lapland bay, where he was frozen up. Although he and his officers made heroic efforts to obtain relief, they failed to do so, and the entire company of sixty-five souls slowly perished at their posts. one by one, from cold and hunger.

The next explorer despatched from England was Steven Borrough, who, in 1556, sought to discover a north-east passage to China. He reached Nova Zembla, but failed in his immediate object.

Between 1570 and 1580, Oliver Brunel, Commander of the Dutch Arctic Expedition, proceeded along the coast to the mouth of Obi river; from thence he reached Nova Zembla. He made several expeditions, but none of any practical value. Subsequently Pet and Jackman, following Borrough, discovered some straits near the island in 1580; but owing to the severity of the winter, their expedition was a failure.

The next explorer was the famous Dutch navigator, William Parents. His discoveries in 1594 and 1596-7 were substantial ones; and the positions marked on his charts, three hundred years ago, have been found correct at this day.

The next explorer was the well-known Henry Hudson, who in 1608, with a small vessel, a crew of ten men and a boy, undertook to sail to China and Japan across the north pole! He reached Nova Zembla, but could get no further, and had to return. Subsequently Capt. Wm De Vlamingh, a Dutch whaler, sailed even far north of Nova Zembla, and must have sighted Franz-Josef Land. Cornelis Rould, another Dutchman, sailed in 1698, north of Nova Zembla, and sighted land.

In 1676, Charles II. sent Capt. Wood on an expedition, but after reaching Nova Zembla he lost a vessel and had to return to England. In 1760, Loschkin, a Russian captain, sailed around Nova Zembla, but he spent three summers in the effort.

In 1768-9, Rosmyssloff, a Russian naval officer, went to Nova Zembla, in search of silver ore. He failed to find it, but made a thorough examination of the coast, and made a valuable report on the fauna, flora, and geology of the country.

In 1807, Count Rumanzoff despatched another expedition in search of silver ore. It also failed to find any; but much geographical knowledge was obtained by the explorers.

During the years 1819—1824, the Russian Government despatched expeditions to make surveys of the Nova Zembla coasts. The later ones, under Lieut. Lutke, were highly successful. These expeditions were continued down to 1838 with varying success, when they were abandoned. From that time to the present, exploring expeditions to those seas have been despatched from various countries. The record of their adventures and discoveries are deeply interesting, and many thrilling incidents of peril, heroism and bravery are also recorded of them. For practical results, however, the later ones mentioned in our last paper on this subject are the most interesting and valuable.

The following remarks on *The Duty of Teachers as Citizens*, are selected from the address of Mr. Rankilor, President of the National Union of Elementary Teachers in England, delivered at the late meeting in Brighton:

DUTY OF TEACHERS AS CITIZENS.

And now permit me to ask whether the time has not arrived

when the practical experience of teachers should be brought to bear more directly upon the formation of public opinion, at least so far as the great question of national education is concerned. Is it not true that our work as educators has been restricted so rigidly to the schoolroom and the child, that we appear almost to have lost sight of our duties and privileges as citizens? The Act of 1870 most wisely developed a latent but powerful educational force. The establishment of School Boards gave to every ratepayer a direct personal interest and influence in national education, and Mr. Forster may well feel proud of the satisfactory results already achieved by means of the machinery which his statesmanship set in motion. The future usefulness of School Boards will, however, be greatly impaired and their progress retarded, if the test of fitness for membership is in the future to be a political rather than an educational qualification; a promise to "keep down the rates," rather than a determination to give to the working classes a wisely liberal education. Much mischief has been wrought by the plausible and too often uncontradicted platform nonsense uttered by ill-informed candidates, and in all such cases the intervention of the experienced teacher is both a necessity and a duty. We regard the education of the country as of supreme importance; we rejoice that it is no party monopoly, and gladly recognise the fact that it numbers amongst its best friends eminent men of all shades of political opinion. The progress made since 1870 has been steady and continuous, and we sincerely hope that no unwise changes will be permitted to arrest it. It is quite true that the education estimates have largely increased; but when we remember that the additional money is paid only for full value previously received, and that, according to Mr. Forster, the increase is due to "the teaching of the lowest elements—reading, writing and ciphering—to those children who have been swept by the Education Act into the schools," the extra cost really affords good ground for national satisfaction rather than complaint. But, further, the money thus expended is immediately reproductive, and that in a far higher degree than the millions so readily voted for other and more questionable purposes. The country is certainly passing through a period of great commercial depression, and retrenchment in the national expenditure is both desirable and necessary. But an appeal to the constituencies on this question would show, I am sure, that in their opinion the education grant is the last to which the pruning knife should be applied. Is it not somewhat strange that the first reactionary note should be sounded by the Vice-President of the Council, and re-echoed by Mr. Matthew Arnold in his last report? "Popular education," says the Inspector, "has had its moment of high favour in this country, and nobody has asked questions about its cost, so long as the prosperity of the country was increasing by leaps and bounds. I confess I am afraid of the cold fit following the hot one, in a season of less prosperity. I am afraid of a storm of discontent and obloquy raised against our very expensive system of elementary schools, and of the outlay upon them being as much overshrunk as it is now, I think, overswollen." Teachers who are brought more or less into daily contact with the working classes in our large towns do not share Mr. Arnold's fears. The cold fit, which the Inspector so greatly dreads, has not yet afflicted the overburdened ratepayer, and the reason may easily be divined—he gets full value for his money. There are those, doubtless, who consider that the so-called working classes are being over-educated, and thus rendered unfit for the duties of their station. Such objectors forget that in this country class overlaps class, and that no sharp dividing line can in any case be drawn between them. They lose sight of the fact that the poorest children attending our elementary schools "have been born with the full faculties of moral, intellectual, and religious beings; that they are as capable, when instructed, of studying the works of God, of obeying His laws, of loving Him, and admiring His institutions, as any class in the community; in short, that they are rational beings, capable of all the duties, and susceptible of all the enjoyments which belong to the rational character"; and that, consequently, "no education is sufficient for them, which leaves any portion of their highest powers waste and unproductive" (Combe). "I have no sympathy whatever," says Dr. Chalmers, "with those who would grudge our workmen and our common people the very highest acquisitions which their taste, or their time, or their inclinations, would lead them to realise; for, next to the salvation of their souls, I certainly say that the object of my fondest aspirations is the moral and intellectual, and, as a sure consequence of this, the economical advancement of the working classes,—the one object which, of all others in the wide range of political speculation, is the one which should be the dearest to the heart of every philanthropist and every true patriot." We are, I fear, approaching another educational crisis, but, thanks to this organisation, we are fully prepared to meet it. The views of the N. U. E. T. on various subjects have already been brought prominently before candidates for Parliamentary honours, irrespective of party colour; and although pledges have very properly not been required, we may fairly assume that many members of the new House of Commons will be disposed to consider favorably any educational measure which has the support of this Union. It is somewhat amusing, though not very surprising, to find objections raised to legitimate action of this kind. A newly developed political force, intelligently directed, is doubtless an important factor in determining the result of an election, and might even upset all the previous calculations of aspiring candidates and their friends. But I doubt whether even this pathetic consideration will induce teachers, who pay their quota to the local and general taxation of the country, practically to disfranchise themselves by remaining passive spectators of a contest which they have the power materially to influence, and in which their best interests are involved. And why is such an act of self-sacrifice expected from us? There no doubt remains a considerable amount of misconception as to the nature of the relationship which exists between ourselves and the Education Department. Not a few well-meaning, and, in their sphere, influential individuals, still regard us as the charity children of the Department, the flower, it may be, of the "lower classes," taken in hand in a spirit of the purest unselfishness, by a paternal Government to whose service we should consider ourselves ever bound by ties of the deepest gratitude. Now this poetical fancy may be very touching, but it is "an airy nothing" nevertheless. A retrospective glance will show that free College training, certificates bearing a money value, pensions, etc., were inducements which the Lords of the Committee of Council on Education were compelled to offer, because they could not otherwise secure a sufficient supply of candidates. Anything like patronage was conspicuous by its absence, and the teacher was welcomed as the friendly ally of the Government in its crusade against ignorance and vice. But in 1862 this pleasant relationship was rudely interrupted, and, if the severance had been absolute instead of partial, it would not have been an unmixed evil. But, unfortunately, freedom from Civil Service privileges did not carry with it immunity from Civil Service disabilities, and this is the anomaly that we wish to see removed. And how may this be done? By transferring to a Representative Educational Council, incorporated by Act of Parliament, the sole power to grant diplomas to teachers The advantages of such a change are manifest. The certificate, which has been unnecessarily degraded to a mere license to teach, would be restored to its original and proper position as a permanent stamp both of scholarship and practical skill in the art of teaching. Its value would be a fixed quantity, measurable by managers of schools and by the public, and not liable to variation in the interests of "supply and demand." Annual endorsements, distasteful alike to inspectors and teachers, would cease; and, further, a diploma thus granted might easily be graded to meet the requirements of higher as well as of elementary schools, thus opening up a much-needed career for teachers within their profession.

—A case of considerable importance to teachers was decided in Listowel at the April session of the County Court. One of the teachers of that town resigned a few days before the midsummer holidays in 1879, and continued to teach until the close of the session. The Board refused to pay her for the vacation, and the Education Department on being appealed to declined to interfere with the action of the local authorities. The lady, however, believing that she had law and justice on her side, entered an action against the School Board and won her case. We congratulate her, and Ontario teachers generally, on her success.

—An exchange makes the following sensible suggestion:

As a substitute for "Friday Afternoon Rhetoricals," over which the teacher presides, we would suggest properly conducted literary

societies. These could be organized in every county and graded school, and would accomplish much more for the development of independent thinking among the students than the present method. In such organizations let all the officers be selected from the students. Let the teacher be a member of the organization, with the same privileges as the other members. Let the pupils in every instance elect the officers. Expect the president to keep order and to be posted in regard to parliamentry rules. Require all the pupils to become members. Encourage originality in the exercises and discussions of business pertaining to the society. Hold the sessions Friday afternoon or any convenient time. Those who adopt the plan will find it far better than the present system of rhetoricals.

—The *Ohio Educational Monthly* contains some common-sense remarks upon educational journalism :

The great difference in the qualifications of teachers is, no doubt, the cause of the many attempts to establish school journals to meet their varied wants. Every attempt has its influence. No school journal that has ever been started has been so weak that it has not been worth its subscription price to some of its readers. The saddest thing in school journalism is the fact that the journals are so short-lived. Some one has said that the average age of school periodicals is about three and one half years. In view of this lamentable fact we are compelled to exclaim mentally when a new educational or teachers' journal comes to our table, "BORN TO DIE!!" This sad exclamation applies to the beautifully printed, vigorous, and good, as well as to the poorly-printed and feebly good.

—We call attention to the article by Mr. Richard Lewis, on Mark Antony's Oration, in the Practical Department. As an analytical and elocutionary study it will be of great value to teachers of Fifth Book classes and to those preparing for examination. It will be followed by others of a similar character.

—We take much pleasure in announcing that Mr. W. J. Gage, of the firm of W. J. Gage & Co., publishers of the CANADA SCHOOL JOURNAL, school text books, and other educational works, has gone to Europe on his marriage tour. His wife was Miss Ina Burnside, youngest daughter of Mr. David Burnside, Fellow of the Educational Institute of Scotland.

—The names of the successful candidates at the Ottawa Normal School, at the recent professional examinations, were accidentally omitted from the present issue. They will appear next month.

Contributions and Correspondence.

PUBLIC SCHOOL TEACHERS IN MANITOBA.

BY THE REV. W. CYPRIAN PINKHAM, CHIEF SUPERINTENDENT OF SCHOOLS, MANITOBA.

The number of letters from all parts of the Dominion asking about the examination, salary, and prospects of teachers in Manitoba, is so large that it seems desirable to give such information as may be of use to the members of the profession who are thinking of removing to the Prairie Province.

At the present time the supply of teachers is fully up to the demand; still as year by year the number of schools increase in a very marked manner, and teachers, for various reasons leave the ranks of the profession, openings constantly occur. Trustees can only engage those who are duly authorized by the Board of Education to teach. The Protestant section of the Board of Education has adopted a regulation under which the Superintendent endorses, at sight, the certificates of good standing obtained in other Provinces of the Dominion, so that immediately on his arrival here a teacher can become qualified for any vacancy in our public schools which he may be able to find. But the endorsation only enables the owner of the certificate to teach until the next general examination of teachers, at which he must present himself. During the past year examinations were held in August and December. The next examination commences on the second Tuesday in August, and will be held at such places as may be decided upon (Winnipeg will certainly be one of such places), of which due notice will be given. Every candidate who proposes to present himself for examination must send in to the Superintendent, at least six weeks before the day appointed for the commencement of the examination, a notice stating the class of certificate for which he is a candidate, and a description of the certificate he holds, if any; together with a certificate of good moral character, from some clergyman or Justice of the Peace.

There are three classes of certificates, and two grades in each class. First class certificates are valid during the pleasure of the Board. Candidates in this class must furnish satisfactory proof of having taught (anywhere) for three years. Second class certificates are valid, grade A for four years, grade B for three years from the date of issue. Candidates must furnish proof of having taught for at least one year. Third class certificates are valid, grade A for two years, grade B for one year from the date of issue. To be eligible for examination in this class, the candidate, if a female, must be sixteen years of age, and if a male eighteen years of age. In order to obtain certificates, candidates in all three classes must obtain, for grade A, 67 per cent. of the total marks on all the subjects of examination in the class, and 40 per cent. out of the maximum of marks awarded on each subject; and for grade B, 40 per cent. of total marks, and 25 per cent. of marks awarded on each subject.

Candidates of all classes are examined in Reading, Spelling, Writing, Composition, English Grammar, Geography, English and Canadian History, School organization and management, and Arithmetic, the questions for third class candidates being as a rule less difficult than those for second and first. The additional subjects in the second class are Book-keeping, Algebra (to the end of Simple Equations), and Euclid (books I. and II.); and those in the first are Book-keeping, Algebra (Colenso's part 1st, or corresponding part in Todhunter's or Loudon's), Euclid (books I, II, III, IV, VI, with definitions of book V.), Mensuration, Natural Philosophy, Physiology, Botany, Chemistry, and English Literature.

It will be seen that the present programme does not embrace as many subjects as teachers in Ontario, for instance, are examined in. Yet the result of our examinations show that the present standard is not unworthy of being compared with that of other older Provinces.

The following gentleman constitute the present Board of Examiners, from whom candidates cannot fail to get ample justice, viz: Rev. James Robertson (Chairman), the Superintendent, Secretary, Rev. Prof. Bryce, M. A., Prof. Hart, M. A., Canon O'Meara, M. A., J. F. German, M. A., E. Morrow, M. A., A. Campbell, B. A., S. P. Matheson (Deputy Warden St. John's College), S. Pritchard, Prof. R. Bourne, M. A., S. C. Biggs, B. A., A. C. Killam, B. A., W. Black, B. A., A. M. Sutherland, B. A., and J. H. Bell.

The salaries of the teachers during the past year ranged between $83.33 (the salary paid to the Principel of the city school) and $25 per month. The average salary in rural districts is $400 per annum. It is often difficult to get good accommodation; not unfrequently the teachers in the newer districts of the Province have to walk a pretty long distance; but circumstances are not harder for teachers than they are for clergymen and others, yet those who

are unable to endure inconveniences and hardships had better remain where they are. But for the young and vigorous; for those who, in addition to good mental and moral training, are gifted with a good temper, courage, tact and common sense, there is a grand future in Manitoba. There will always be vacancies for such teachers, and if their circumstances should be somewhat harder than they are likely to be in the older provinces, it is much better in the long run. "It is in the stress of the storm that heroes are born."

THE THREE R'S.

BY DAVID ALLISON, LL.D., CHIEF SUPERINTENDENT OF SCHOOLS, NOVA SCOTIA.

The Doctrine of "the Three R's," which, at least in its modern cis-Atlantic application, amounts to this, that public provision for instruction beyond the limits of the strictly elementary branches is an unjustifiable invasion of private rights, is either true or false. If the former, we will find ourselves hard pressed to make satisfac tory defence of that part of our system which the theory concedes to us. "I will thank any person," says Edward Everett, "to tell why it is expedient and beneficial tn a community to make public provision for teaching the elements of learning, and not expedient nor beneficial to make similar provision to aid the learner's progress towards the mastery of the most difficult branches of science, and the choicest refinement of literature." If the doctrine is false, as I believe it to be, it is well to understand just where its unsoundness lies. Its essential vice consists in assuming as real and discernible a distinction which has no basis in the nature of things. When a wealthy tax-payer protests his unwillingness to provide more than *a good English education* for his poorer neighbors' children, he either concedes his own point, or uses words without meaning. For what *is* a good English education? Who will say that up to a certain point it is right to forward the work of education at the public expense, but to carry it beyond that point in this way infringes on private or proprietary rights? Especially, who will undertake to define and fix that point? What is that precise *quantum* of primary knowledge, the cost of imparting which may be fairly assessed on property? And what is *primary* knowledge? Is the term *Elementary education* itself perfectly clear and self-explanatory? A glance at the celebrated English Education Act of 1873 (or perhaps I should say of 1870) may help us to answer. The Act is termed the "Elementary Education Act," and an "Elementary School is defined to be one in which Elementary education is the *principal* part of the education given, and *at which the fees do not exceed ninepence per week*!" It is a plain fact that a term which, from its elastic character, does not admit of fixed definition, cannot be used with advantage as the basis of a theory of public morals. The more the subject is studied, the more deeply rooted, I am assured, will the conviction become that the right to provide education at the public expense is a comprehensive one, finding its natural and sufficient limitation in the intelligent adjustment of means to capabilities.

THE NECESSITY OF ELOCUTION.

BY T. O'HAGAN, BELLEVILLE.

There are many reasons why elocution should be to us a matter of great concern. In the first place, this is an age of discussion, and grave questions are day by day pressing themselves upon us for a solution. The history of events is also fast accumulating, the treasures of science and art are being enriched, and the world makes an imperative call upon everyone to aid in the diffusion of knowledge. Now, voice, the most wonderful of Heaven's gifts to man, is the great instrument for the communication of knowledge; it is the outlet and passage-way of the soul, the great medium for the conveyance of thought and feeling. He who is but a receptacle of knowledge ill fulfils the true end of education. A man is estimated not for what the world gives to him, but for what he gives to the world. The subject of elocution has to deal with the application of knowledge. In proportion as we acquire knowledge comes the demand for its proper conveyance and destination. Of what use is the ship laden with gold and precious stones, if her timbers yield to the billows and she be lost in the deep? So, too, with the mind; in freighting it with merchandise, we should remember that our work does not culminate with a sublime structure and an abundant cargo. We must not only impart knowledge, but also see to it that this knowledge has a means of being conveyed to its proper port. Herein lies the necessity of elocution. True, some of the richest fruits of philosophy, science, and the arts have been given to the world by men and women the most reticent, but the great highway for the communication of thought will ever be through that God-given gift, the human voice, which can ascend from earth to heaven, and bring before waiting audiences thoughts of God and of eternity. Whether science or art, the family or the nation, the Church or State, politics or theology, philosophy or religion, its influence is felt in all. It is a canvas upon which we may paint thought and feeling which others may read. If language is the literature of the soul, it is by means of the voice that soul is brought to the surface, and made tangible and portable. Mrs. Sigourney, speaking of education, says, "The true order of learning should be first what is necessary; second, what is useful; and third what is ornamental. To reverse this arrangement," she adds, "is beginning to build at the top of an edifice." What would you think then of a teacher freighting the minds of his pupils without a single thought as to the means by which each mental cargo may be handled, exchanged and conveyed to its proper destination? Does the teacher who simply aims at filling the hold of his pupil's mind with merchandise fulfil the true ends of education? I think not. The necessity for a thorough and high cultivation of the voice must therefore be abundantly apparent to all. I contend, too, that the work of elocution should commence in the early stages of the child's education, and we should endeavour to present the practical bearings of the subject upon our scholars sc that they may be also stimulated to do their share of the work One of the most common mistakes made in the teaching of reading is, that no attention is paid to the pupil's voice outside of the reading class. Every class should be a voice class in which the voice is used. To hope to train the voice otherwise is like a weak and futile endeavour to express ourselves correctly for twenty or thirty minutes, while during twelve times that period we have been setting at defiance both language and rule. A prudish manner of expression should undoubtedly be avoided, but correctness of language as well as correctness of utterance are at all times pleasing both to the educated and to the uneducated ear. Another fault common in the education of the voice is the habit of forcing loud and boisterous tones rather than intelligent responses—a tendency on the part of teachers to obtain sound without much reference to sense. The worst phases of this are found in the harsh, fierce utterance of the first letters of the alphabet, and in spelling and early reading lessons. Again, the body of sound is rarely correct. The a e i o u of speech is neglected. Unnatural tones are left uncorrected. A mistake, too, is frequently made in taxing in an unusual manner sources of vocal power which do not by any means constitute the *fulcrum power* of the voice. I refer now to the habit of using so largely head and throat tones instead of chest tones. Thousands are constantly exhausting physical force in speech, which might be

saved if the proper organs were brought into play. But perhaps you will confront me with the question, what if the teacher is not prepared to criticise the voice of the pupil? Even admitting the force of this difficulty, every teacher can at least apply the principle of correcting bad habits as far as he knows, and this itself will accomplish much good. We should early endeavour to train the ear, to discriminate between what it likes and what it dislikes; and when this is accomplished, the point of a higher and closer discrimination is not far distant. Once you have trained the pupil to be his own critic, the teacher's work is largely done. In recitation the voice should never be diverted from the simplest and finest tones of its ordinary use. We should aim to encourage a naturalness of tone in the grammar recitation, in the reading class, and on the playground. Was there ever committed to human care and management any instrument capable of such delicate variety and harmony as the voice? Just listen for a moment to the prattle of happy childhood; is it not pure as the morning breeze, sporting as the winged songster, and variable as the mountain stream that laughs itself into the valley? As a physical faculty the exercise of the human voice concerns itself. It tends to a healthy development of all the physical powers. In fact, if properly directed voice, culture becomes a most practical source of health and grace to the whole being. There is no relation of life upon which the voice may not be taught to reflect. In the social circle it becomes the current of revelation from the within to the without. The business man lays his voice by the side of his wares, and the eye of the purchaser harmonizes with the ear in its judgment. The public man presents himself first to the eye and ear of his audience. If his words be favorable, he sustains the position of a stranger who approaches you with a strong letter from a friend; if unfavorable, there is atonce a barrier thrown between you and him. The culture of the voice should be also taught as a matter of cleanliness, as well as a matter of courtesy. If we owe our neighbor the morning salutation, we equally owe him that salutation in a pure tone of the voice. It should also be taught as an agency of moral culture. A voice of dignity and eloquence will attract to purity and truth, to virtue and religion. I believe that a new ere is dawning in the history of education with refrence to the human voice; more attention will be devoted to its proper cultivation; and as the human heart glows in a higher benevolence and the mind of man expands to a wider range, I believe that the voice will be found the finest to reflect the Divine image in tones such as make up the melody of heaven.

THE DANGERS OF HABITUAL HEADACHE, AND OF INTELLECTUAL EXERTION OF THE EXHAUSTED BRAIN.

The following paper, by Dr. Treichler, of Bad Lenk-Bern, was read in the section of Psychiatry and Neurology, at the fifty-second meeting of the German Association of Natural Historians and Physicians, held at Baden-Baden, 1879. (Pp. 324, 325 of *Tageblatt.*)

School Hygiene, the youngest step-child of medicine, has, till now, only sought to ward off bodily mischief; yet, as school is chiefly concerned with brain activity, it is very probable that a rich material lies here before Pyschology and Psychiatry, and a wide field of work in watching over it and raising their warning voice, that the activity and exertion of the brain be normal, and that it be not allowed to become the cause of serious illness in later life.

Learned men have been very egotistical in this respect; they observe the mischief in their own and other people's children, but they are so engrossed by their own special studies and callings that they allow the health of these young people to suffer irreparable harm; and this is especially to be lamented in the case of young women, who are far more heavily weighed than men, by the restrictions of fashion and prejudice.

According to my experience, habitual headache has considerably increased with boys and girls: it destroys much of the happiness and cheerfulness of life, produces anæmia and want of intellectual tone, and, what is worse, it reduces many a highly gifted and poetic soul to the level of a discontented drudge. Physicians and Psychologists have paid far too little attention to this affection as well as to School Hygiene, and it would be a good work for the German Scientific Association to inauguate a change in this respect. Although it is more difficult to collect precise statistical data on habitual headache than on myopia, yet the result of various investigations, at Darmstadt, Paris, and Neuenburg, goes to prove that one-third of the pupils suffer from it. Undoubtedly the principal cause is intellectual over-exertion, entailing work at night, and the insisting by parents on the too earnest taking up of a variety of subjects—music amongst the rest.

The pathological anatomical changes in the worst cases of this unhealthy condition I consider to be a disturbance created by anæmia in the nutrition of the ganglion cells of the cortex of the cerebrum. It is well known that a badly nourished brain is much more quickly fatigued by intellectual exertion than a brain in a normal condition, just as in the case with the muscles.

A second cause of habitual headache is a passive dilatation of the blood vessels of the brain, also connected with serious disturbances of nutrition, whereby the perivascular space round the capillary vessels is contracted, and the getting rid of used-up matter greatly impeded. Modern pathology now looks on progressive paralysis, in its earliest state, as a vasomotor disturbance of nutrition of the cortex of the cerebrum, in which the vessels of the pia-mater get into a palsied condition of dilatation, and we have degeneration of the cortex of the brain produced by stagnation of the current of lymph. If I am correct in this pathological anatomical definition of the two diseases, it is plain that they have a distant resemblance and affinity to each other, and that physicians ought by no means to ignore them. In habitual headache, the palsied condition of the brain vessels is transitory; in progressive paralysis it is usually irreparable.

A second great evil, in the more advanced schools, consists in intellectually overloading of the pupils, and in their being compelled to take up too many subjects, also in working on at night when the ganglion cells are thoroughly exhausted. This must produce the same condition in the brain as would be produced in the muscles, if, after a long day's march, a mountain climber were to continue walking far on into the night, and were to repeat this day after day.

I might here prove that the methed of instruction, now-a-days, is not only a cause of disease, but also perfectly useless, because, instead of increasing knowledge, it produces mental confusion, and becomes simply a labour of the Danaides, or like carrying water in a sieve. I believe, Phsychology can prove the correctness of what has been here said, if we consider the experiences given us by learned men who have suffered from senile brain atrophy, and also that, in giving a rational amount of time to work, and to the exercise of thought and memory, the gain for the pupil will be far greater than that attained by the present method.

What we call thought and impression made on the memory, are undoubtedly processes of molecular motion in the protoplasma of the intellectual brain cells, although it still remains a riddle how such a process of motion is in us transformed into thought.

When these ganglionic cells begin to be diseased by senile atrophy, the memories and scientific problems of youth are still clear, and can be reproduced, while the same ganglionic cells can no longer comprehend and work at new, though much simpler scientific problems, and while, with regard to a thing of yesterday, the memory is uncertain. From this we may draw the following conclusions:

1. That what the ganglion cells, when in their full health and vigour, have grasped, remains; so that, after the lapse of half a century, and with the beginning of disease, it may still be reproduced.

2. That the ganglion cells, diseased by old age, are, in reference to the accomplishment of work, like greatly exhausted ones, and have lost the power of understanding and abidingly taking in new and difficult ideas. The ganglion cells, therefore, can only take in new ideas, as an intellectual acquisition, so long as they are powerful, are not exhausted, and are nourished with healthy blood. The boundary line is drawn here quite as exactly as is the quantum of nourishment for the stomach of an invalid.

3. That the constant addition of fresh subjects in the teaching programme, making night-work necessary for the pupil when the ganglion cells are already exhausted, entirely defeats its object of

enriching the intellect, because new ideas cannot then be really grasped, and confusion is produced as to what has been learnt in the day. The great object of the school, therefore—earnest intellectual discipline, and the formatien of the desire for continuous cultivation of the mind—is thereby frustrated.

Confusion in the intellectual powers of an overwrought pupil and his final gain, must be the same as that which would occur in a counting-house, where there were only means for the despatch of 100 letters a day, the daily number requiring attention being from 130 to 150. Confusion in the transaction of business and decreased gains would be the result.

CORRECT METHOD OF READING JOHN I: 1.

To the Editor of the Canada School Journal.

SIR,—I noticed in the last issue of your Journal an article from Mr. R. Lewis, elocutionist, as to the correct method of reading the first verse of the first chapter of John's Gospel. With all deference to Mr. Lewis, I must beg leave to differ from him in the way he renders the following passage : In the beginning was the Word, and the Word was *with* God, and the Word *was* God. Mr. Lewis is correct in his analysis, viz.: what was in the beginning—the *Word* ; what that was—*God* ; when it was—in the *beginning*. According to the above analysis, we get the following capital idea—In the *beginning* the *Word* was *God*, " with God " being simply a secondary idea, or subordinate phrase to the capital thought. For if (according to Mr. Lewis's analysis) the *Word* was *God* in the *beginning*, it must certainly have been *with* God, and therefore can take only the inferior emphasis. Evidently the writer had an object, and only one, in view, and that was to establish Christ's divinity from the beginning. And is not this primary thought brought out by giving the superior emphasis, 1st, to beginning, 2nd, to Word, 3rd, to God, and thus present the main thought—in the *beginning* the *Word* was *God?* And this rendering clearly sets forth the fact, that the Word was not only with God, but was *God* from the *beginning*. By emphasizing *was* and *with*, as suggested by Mr. Lewis, we raise a question as to the time when the Word was God, which is not necessary, as that is fully brought out by emphasizing *beginning*. Therefore the emphasis placed upon the verb *was*, and the preposition *with*, locate the time when the Word was God, and leave the impression upon the mind that the *Word* and *God* were one at the beginning, but not at the present time. And this, in my opinion, was not intended by the writer. Take for example the following—In the beginning of this century, the British Empire *was* a strong nation, and *was* monarchical in her form of government. By emphasizing the verb *was*, you will see at once that we raise the question as to the time when she was a strong nation, and the inference drawn is, that she *was* strong, and *was* monarchical in form of government at the beginning of the century, but is not at the present time. I cannot understand how Mr. Lewis can consistently place the emphasis upon *was* and *with* according to his own analysis. The superior emphasis must follow the dominant thought—in the *beginning* the *Word* was *God*. The unity is asserted by emphasizing *Word* and *God* in the last clause of the verse, for the *Word* was *God* and *God* was the *Word*, consequently there cannot be anything effected to make the association stronger between Word and God by emphasizing the preposition *with* in the phrase " with God." Mr. Lewis says that " the common method of reading this passage is the right one, and is supported by the authority of Rev. J. H. Howlett, author of 'Instructions on Reading the Liturgy,' and is in strict accordance with the commentaries of Barnes, Scott and others on the passage." I am not aware that either of the commentators mentioned ever possessed any knowledge of elocutionary analysis, but on the other hand they were not distinguished as pulpit orators. Therefore their authority can have but little weight as to the correct method of reading the passage. I have too much respect for Mr. Lewis as an elocutionist to think for a moment that he would sacrifice his opinion for that of any man who had not made the subject of elocution and rhetorical analysis a careful study.

J. M. H. HARRISON, A.M.

Woodstock, April, 1880.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

A CELEBRATED THEOREM.

Every mathematical student at some period in his course has attempted, successfully or otherwise, a solution of the theorem, " if the bisectors of the angles at the base of a triangle be equal, the triangle is isosceles." Recently our attention has been called to the theorem by Dr. Allison, Superintendent of Education for Nova Scotia. In a letter he says: "In both Potts' and Todhunter's Euclids I find this theorem. Potts gives it as an exercise with the following hint or annotation: 'If two equal straight lines be drawn, terminated by two lines which meet in a point, they will cut off triangles of equal area. Hence, &c.' To my view this hint is worse than enigmatical: it is positively misleading, asserting as it does a mathematical untruth. Todhunter offers a *reductio ad absurdum* solution. For your next issue I will send you an elegant original solution by Alex. McKay, Esq., of the Dartmouth High School. Todhunter observes that the history of the theorem may be found in the Lady's and Gentleman's Diary for 1859. If you can publish this extract in your next issue you will much oblige, &c."

Feeling satisfied that many of our subscribers, besides Dr. Allison, will be interested in this question, we give the following

EXTRACTS FROM THE LADY'S AND GENTLEMAN'S DIARY.

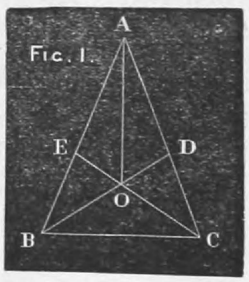


FIG. 1.

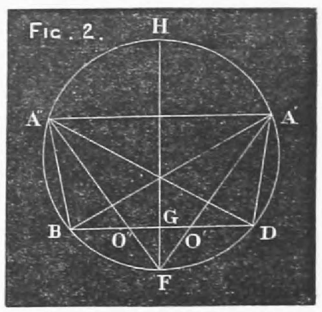


FIG. 2.

1. Let ABC be the triangle, and O the intersection of the bisectors BD, CE. Then in the triangles ABD, AEC, we have $EC = BD$, the angle BAC common, and the bisector AO of this angle common also. Hence, in the following manner we may show that these triangles are equal in all respects. If on BD we describe a segment of a circle containing an angle equal to BAC, and on the common base BD so place the triangles BAD, EAC that the point A may occupy the positions A' and A'' on the circle, the bisectors $A'O' = A''O'' (= AO)$ will evidently cut BD in O' and O'', and will intersect on the circumference at F, making $BF = FD$. It also follows that $A'FH = A''FH$, and consequently that the arc $A'H = A''H$. The arcs $A'D$, $A''B$, and consequently their chords, are therefore equal ; and by adding equals to equals we find arc $A'B = A''D$, and hence the chord $A'B = A''D$. But $A'B = AB$, and $A''D = AC$. Hence $AB = AC$. [In the preceding it is not so evident how the fact " It also follows that $A'FH = A''FH$ " is arrived at. We therefore suggest that from the preceding statement the proof may be finished as follows : As any line FA'' revolves from B towards H it continually increases, but the part FO'' continually decreases ; hence $O''A''$ continually increases. Hence in only one position can it equal $A'O'$. But it is equal to $A'O'$ when FA', FA'' make equal angles with the tangent at F. Hence

FA', FA'' make equal angles with the tangent at F, and the arc $FA'' = FA'$. But $FB = FD$; therefore $BA'' = DA'$, and angle $A''DB = A'BD$, &c.—MATH. ED. C. S. J.]

2. The property holds when BD, CE are perpendiculars from B, C. For $AB.CE$ = twice area = $AC.BD$; therefore $AB = AC$.

It also holds when D, E are the middle points of AB, AC. For

$$AB^2+BC^2 = 2BD^2+2AD^2,$$
$$AC^2+BC^2 = 2CE^2+2AE^2;$$

whence $AB^2-AC^2 = 2AD^2-2AE^2 = \frac{1}{2}AC^2-\frac{1}{2}AB^2$; or $\frac{3}{2}AB^2 = \frac{3}{2}AC^2$; $\therefore AB = AC$.

3. *Analytical Solution.* The squares of the bisectors of the angles of a triangle are

$$CE^2 = ab - \frac{abc^2}{(a+b)^2}, \quad BD^2 = ac - \frac{acb^2}{(a+c)^2}.$$

Hence $b - \dfrac{bc^2}{(a+b)^2} = c - \dfrac{b^2c}{(a+c)^2}$.

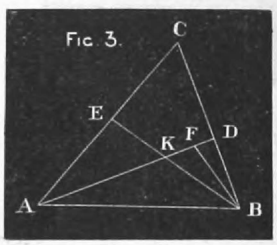
$$\begin{aligned}\text{Or } (b-c)(a+b)^2(a+c)^2 &= bc\{(a+c)^2c-(a+b)^2b\}\\ &= bc\{a^2c+2ac^2+c^3-a^2b-2ab^2-b^3\}\\ &= bc\{a^2(c-b)+2a(c^2-b^2)+c^3-b^3\}\\ &= (b-c)bc\{-a^2-2a(b+c)-c^2-bc-b^2\}.\end{aligned}$$

And it is evident from the negative signs throughout the final result that the two sides of this equation can only be equal when both vanish, which requires $b = c$.

4. The solution to the question involves a principle which it may be worth while to state more explicitly. It is as follows: *When two triangles have their bases, their vertical angles, and the bisectors of these angles all equal respectively, the triangles are equal in all respects.* Were this property admitted into elementary geometry as "well known," it would simplify many demonstrations relating to the construction of triangles when their vertical angles and their bisectors are among the data.

5. Another proof:

Lemma. In any triangle if angle CAB be less than CBA, then will the bisector AD be greater than BE.



By Euclid, VI., 3, we have

$$\frac{AB+BC}{AB} = \frac{AC}{AE}.$$

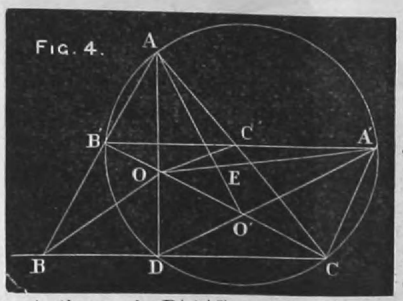
Also $\dfrac{AB+AC}{AB} = \dfrac{BC}{BD}$.

But AC is greater than BC, hence for a double reason AE is greater than BD. Similarly, EC is greater than DC. Hence $AE.EC$ is greater than $BD.DC$. But by a known property $AD^2 = AC.AB - BD.DC$; and $BE^2 = BC.AB - AE.EC$. But $AC.AB$ is greater than $BC.AB$ and $BD.DC$ is less than $AE.EC$. Hence for both reasons AD is greater than BE, or the less bisector is drawn from the greater angle.

Proposition. Hence if the bisector AD equal BE the triangle is isosceles. For if the angles at the base be not equal, let CAB be the less. Then AD is greater than BE by the Lemma. But AD by hypothesis is equal to BE. Hence the triangle must be isosceles.

6. In the proof given in § 1, preceding, it is not necessary that BD and CE should *bisect* the angles at B and C, but only that these equal lines should intersect on the bisector of A, and hence the process is equally valid for the more general theorem: *If any two lines, drawn from the base angles of a triangle, meet on the bisector of the vertical angle and are equal to each other, the triangle is isosceles.*

7. The proposition may also be established by showing that, *Every non-isosceles triangle has the bisectors of the angle at the base unequal.* To prove this, let (Fig. 3) angle CBA be greater than CAB, and $\therefore$ CBE greater than CAD. Make $EBF = EAF$, and a circle will evidently pass through the points E, A, B, F. But chord AF is greater than BE, because angle ABF is greater than EAB. Therefore, *a fortiori*, AD is greater than BE. Hence since every non-isosceles triangle has the bisectors unequal, and since every isosceles triangle has the bisectors equal, it follows that if the bisectors be equal the triangle is isosceles.



8. Or thus: Let BC', CB' be the equal bisectors. Describe a circle about $A'BC$; make angle $CB'A' = AB'C$; join $A'C$. Then the triangles $AC'B$, $A'CB'$ are identical. Let the bisector AO meet the circle in D; join DA'. Since the arc $B'D$ is equal to the arc DC, DA' bisects the angle $B'A'C$, and the bisectors AO, $A'O'$ are equal, because the triangles AOC', $A'O'C$, being equiangular, and having the side $AC' = A'C$, are identical. Let AO', $A'O$ intersect in E. The triangles DOO', DAA' are similar, because angle $DOO' = ADB' + DB'C = AA'B' + DCB' = AA'B' + B'A'D$. $\therefore$ $DO : DA' = DO' : DA$, and $\therefore$ the triangles DOA', $DO'A$ are similar. Hence angle $DOA' = DO'A$; and $DAO' = DA'O$. Consequently the triangles AEO, $A'EO'$ are similar, and because $AO = A'O'$, they are also equal. Hence $EO = EO'$, and angle $EO'O = EOO'$. But $EO'D = EOD$. $\therefore$ $DOO' = DO'O$, and $DO = DO'$, and also $DA = DA'$. $\therefore$ angle $AB'D = A'CD$; but angle $DB'C = DCB'$, and consequently $AB'C = A'CB'$. $\therefore$ $AC = A'B' = AB$.

9. It appears that the question was first proposed in Terquem and Gerono's "Nouvelles Annales de Mathematiques" for 1842, where two solutions are given, the first being similar to that given above in § 1, but the second is different:—Two circles are described through the points ADC, BEC respectively (Fig. 3), and their intersection O upon CK produced gives the relation OC, $OK = OE^2$ in both cases, where the point O is proved to be the middle point of the two arcs AOD, BOE and the equality $AC=BC$ immediately follows. Ten years later, Professor Sylvester drew attention to the same property in the Philosophical Magazine for November, 1852. He there gave two demonstrations, one by Mr. J. H. Smith, of Jesus College, Cambridge, the other by himself, to which he added a generalization of the enquiry to the n-sectors of any given angles. In the course of this discussion Mr. Sylvester came to the conclusion that, with regard to this particular question, "no other proof than that of *reductio ad absurdum* was possible in the nature of things;" and he based his opinion on "the necessary non-existence of real roots, between prescribed limits, of the analytical equation expressing the conditions of the question." This principle, however, does not hold good with regard to theorems. The "necessary non-existence of real roots" may indicate the impossibility of constructing a problem within prescribed limits, but that it cannot apply to the non-existence of any *direct* proofs of a theorem was ably shewn by Dr. Adamson in the Philosophical Magazine for April, May and June, 1853. Dr. Adamson's paper is well worthy of attention, for, besides containing a clear exposition of the leading principles of geometrical reasoning, it indicates *direct* solutions to the property now under review.

The preceding gives all the information, in regard to this theo-

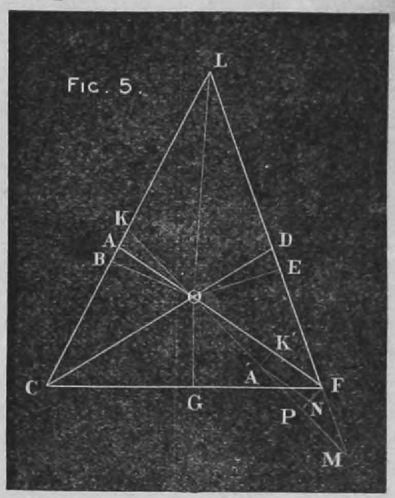
rem, afforded by the Lady's and Gentleman's Diary. We proceed to give the solutions forwarded by Dr. Allison.

SOLUTIONS BY ALEX. MCKAY, ESQ.,

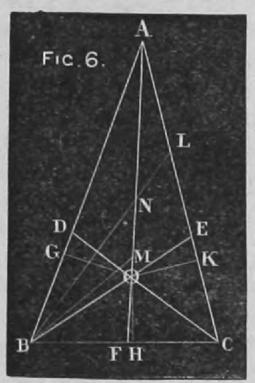
Principal of the Dartmouth High School, Nova Scotia.

1. *Proof.* If two straight lines bisecting two angles of a triangle and terminated at the opposite sides be equal, the bisected angles shall be equal.

Let LCF be the triangle of which the angles LCF and LFC are bisected by the equal lines CD and FA. The bisected angles shall be equal.



If not let $LC > LF$. Make $LM = LC$. Join MO and produce to K. Because the perpendiculars BO, EO and GO are equal (IV. 4) and $\angle BAO > GFO$ (I. 16), $\therefore FO > AO$ (I. 19, Ex. 3) and $\angle OFM > OAC > CKO$. $LB = LE$ (I. E. Cor.), $\therefore ME = CB \quad \therefore \angle LMK = LCD$ (I. 26) $\therefore MK = CD$ (I. 26). $MO > OF$ (I. 19, Ex. 3). Now if $KO >$ or $= AO$, then $MK > FA$, $\therefore CD > FA$. But $CD = FA$, which is impossible; then $LC = LF$. But if $KO < AO$, make $OK' = OK$ and $\angle OK'A' = OKA$, $FP \parallel K'A'$ and $A'N \parallel K'F$. $\angle AKO > \angle KAO$, $\therefore \angle A'NP > \angle A'PN$. $MA' > A'P > A'N$ or $K'F$, $\therefore MK > FA$, $\therefore CD > FA$; but $CD = FA$, which is impossible. $\therefore LC = LF$ and $\angle LCF = LFC$.



2. *Proof.* Let ABC be the $\triangle$ and BE, DC and AF lines which bisect the angles. These lines meet in O (Ex. 3, p. 56) and the perpendiculars GO, HO and KO are equal (IV. 4).

Case 1.—Taking BC as the base, $DB > GB$ and also $EC > KC$. If $AB > AC$ then $BO > OC$, and $\therefore \angle GDO > KEO$ and $GO = KO$, then (I. 19, Ex. 3) $OE > OD$, $\therefore BE > CD$; but it is also equal, which is impossible, $\therefore AB = AC$.

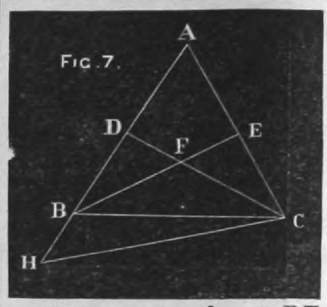
The same proof holds when either D and G, or E and K coincide.

Case 2.—Taking AB as the base, $AE < AK$ and $BF < BH$. Then if $CA > CB$ make $\angle LBA = \angle FAB$ and $\angle MBN = LAN$. $AN = BN$ and $LN = MN$ (I. 26). $FA > MA$ or BL. $BL > BE$ (I. 19, Ex. 3), $\therefore FA > BE$, but $FA = BE$, &c.

The proof is precisely similar when AC is considered as the base, and $FC > HC$, but $DA < GA$.

SOLUTION FROM THE NORMAL SCHOOL, TRURO, N.S.

Let the bisectors BE, CD be equal. Then the triangle is isosceles.



Let BE, CD intersect in F. Then because the angles ABC, ACB are together less than two right angles, their halves FBC, FCB are together less than one right angle. Hence BFC is an obtuse angle. $\therefore CF$ is greater than $\frac{1}{2} CD$ (Hamblin Smith, Ex. 2, p. 29, and Ex. 27, p. 118); $\therefore CF$ is greater than $\frac{1}{2} BE$. Hence BCE is acute (H. Smith, Ex. 9, p. 56), also DBC is acute. Now if BD is less than EC, make $DH = EC$; then HC is less than BC (I., 24). [For it may be shown that if BD be less than EC, angle BDC is less than CEB.] But HC is greater than BC, an inconsistency. Hence EC is not greater than DB; and it may be shown to be not less. Hence $EC = DB$, and angle $DBC = ECB$.

We are compelled to leave over our correspondence for next month.

Practical Department.

OUTLINE NOTES ON QUESTIONING.

BY JAMES HUGHES, INSPECTOR OF SCHOOLS, TORONTO.

I. KINDS—1. *Tentative* or Preliminary; 2. *Teaching* or Instructive (S. cratic); 3. *Testing.*

1. *Tentative*—(*a*) *Probe* to find previous knowledge; benefit to pupils and teacher.
   (*b*) To gain attention.
   (*c*) To form basis for lesson and connect with past lessons.
2. *Teaching*—(*a*) *Lead* in making *discoveries*; *Guide.*
   (*b*) Be Logical, { 1. From *effect* to *cause.* 2. " *cause* to *effect.*
   (*c*) *Step* by *step.*
3. *Testing.* { *Reviewing*— *Repeating*—
   (*a*) *Thorough* (Find out how *little*, not how *much* pupils know.)
   (*b*) Only on work *taught* or *assigned.*
   (*c*) *Never* should be neglected.

GENERAL RULES.

1. Never ask in *Rotation* or *set order.*
2. Never indicate the pupil to receive the question until it has been stated.
3. Do not *repeat* a question for the *inattentive.*
4. Let questions be *simple* or pupils guess or keep silence.
5. Make *simpler*, if not understood.
6. *Vary* form if pupils cannot answer.
7. Questions should admit of only *one correct* answer.
8. *Suit* the *difficulty* to the *advancement* of class.
9. Do not indicate the answer by *emphasis, tone, countenance, form of question*, or *part* of a *word*, &c.
10. If using elliptical questioning, let *omissions* be *definite.*
11. Do not insist on book form or set form of words, except verses of Scripture and definitions in certain subjects.
12. Avoid a set form of words in asking questions.
13. Do not use book questions.
14. Give *every* QUESTION to *every* pupil; then ask one for ANSWER.

HOW.	OBJECTS.			
	TENTATIVE	TEACHING.	TESTING.	
			REVIEWING.	REPEATING.
1. Always state QUESTION to *whole class.*				
2. For *Individual* answers?	Chiefly.	Chiefly.	Exclusively.	Sometimes.
3. For *Simultaneous* answers?	Rarely.	No.	No.	Yes.
4. Elliptical?	No.	Allowable, especially with *Juniors.*	Only with Juniors.	Yes, with *any class*
5. Suggestive?	No.	Rarely. Only when unavoidable.	No.	Rarely.
6. Alternative? (admitting of only two possible answers)	No.	Rarely.	No.	Rarely.
7. Written?	No	Capital method of assigning work.	Yes, when circumstances permit.	No.
8. Rapidly?	No.	No, but *promptly* after an answer is given.	Yes.	Yes.

ELOCUTIONARY STUDIES.

BY RICHARD LEWIS, PROFESSOR OF ELOCUTION, TORONTO.

MARK ANTONY'S ORATION.

(Julius Cæsar, Act III., Sc. II.)

It is impossible to deliver this masterpiece of composition without a full comprehension of all the circumstances which led to it, the relations of the orator to the actions, to the momentous events of the history, to Cæsar, whose character and integrity of purpose he is about to vindicate, and to the difficulties and perils of his position as he stood there before an assembly prejudiced against him, both as a patrician and as the advocate of a supposed enemy to human liberty. The construction of the speech is a rhetorical study. But its deeper value lies in its profound appreciation of the mental condition of the multitude, and the skill with which the orator deals with the prejudices and the sympathies of his hearers, and makes them the ministers of his designs. The character is historical, and the history must in some measure guide the reader; but the oration in its masterly conception and conquest of difficulties is Shakspeare's; and its analysis for delivery is a psychological as well as an elocutionary study of the highest order. The reader who comes to that study with only classical, philological or historical lore, will fail in realizing its spirit. Imagination is as necessary as judgment and learning, rightly to interpret all great points.

Fully to understand the oration the reader must first study the whole tragedy. It is, however, the interview between Antony and the murderers of Cæsar in the first scene of Act III. which reveals to us his feelings and purposes after the assassination. The speech he utters when he beholds the bleeding body of his murdered friend, eloquent and defiant, exhibits his devotedness and indifference to death. When he takes the hand of each conspirator and addresses them in turn,—when he apostrophizes the spirit of Cæsar,

"Pardon me, Julius! Here was thou bay'd brave heart,"

he gives evidence that he *is* an orator far surpassing Brutus in the highest elements of true eloquence, impassioned feeling, power of imagination and the command of fitting language. But the magnificent apostrophe which he utters when left alone—when his pent-up feelings burst out like the burning torrent of a volcano, betrays at once all the scorn, hatred, sorrow and thirst for vengeance which he had concealed from the conspirators, and indicates to us how he will use the privilege granted him to "speak in the order of the funeral." Cassius, who understood him better than Brutus,

"¡Who, only in a general honest thought,
And common good to all made one of them,"

had warned Brutus against granting Antony this privilege. He "liked it not." But Brutus, judging men by his own integrity of purpose, consented to allow Antony to speak, binding him only to the condition,—

"You shall not in your funeral speech blame *us*,
But speak all good you can devise of Cæsar."

With this knowledge of the history of the great oration, we are prepared to study the laws of its delivery.

The third scene of the act makes us acquainted with the feelings of the multitude. Brutus has in a manner convinced their judgment—or perplexed it; but he has failed to move their feelings. A change of government is always agreeable to a people, they grow tired of their rulers and believe that any change will bring advantages. This, at any rate, marks an ignorant people; and hence Brutus, assuming the character of a Liberator, wins the general approbation. Shakspeare introduces four citizens, who each may be regarded as representatives of the popular feeling. Antony, who has been standing by during the latter part of the speech of Brutus and has heard the acclamations of the people, and especially the implied threat of the fourth citizen—

"What does he say of Brutus?"

"Twere best he speak no harm of Brutus here," and the general sentiment expressed by the first and third citizens—

"This Cæsar was a tyrant.
"Nay that's certain,"
"We are blest that Rome is rid of him"—

understands the conditions on which he must commence; and all these considerations must guide the reader as *he* commences. There must be no attempt at oratorical display. Antony is gentle, humble, even obsequious as he begins his address.

"Friends, *Romans*, COUNTRYMEN,—LEND me your ears."

Almost every word, however, has its purpose and is well studied. Antony, the haughty patrician, calls *them*, the common herd, *his friends*, that word must be uttered with studied grace, bordering on tenderness. But "*Romans*"—that word rouses patriotism and natural pride, and lifts them up to one grand height, orator and hearers, which in a moment sweeps away factious feeling and social prejudices. It must be delivered with more force than "friends." It is a word of fire and demands a fuller and firmer tone, for it half wins them to his cause. But it is not enough. There are wide divisions still between Roman and Roman; so Antony crowns the triumphs by making them kith and kin with himself. Patrician and plebeian blood may separate them as Romans, but "countrymen," completing the bond of common interest and sympathies, must be uttered with a warmth which is not even assumed by Antony. Yet he instantly recollects the difficulties before him. He knows the wavering, fickle crowd, and lest he should be suspected of presuming too much upon his patrician claims, he again obsequiously asks them, as if in real homage to their power, to "LEND him"—only *lend* as a great favor, their ears.

I have given this analysis to indicate, as I see it, the spirit in which the address must be opened. The reader must beware of being "oratorical"—and especially must he beware of expressing scorn or irony when he utters the words "honorable men." He

must first convince the multitude, that Cæsar was not ambitious before he may violate his pledge and "let slip the dogs of war."

"I came to-*bury* Cæsar, not to-*praise* him.*

* The hyphen between words indicates that they are to be more closely combined in time.

The *evil*/ that men do—lives *after*them;
The-*good*/ is oft interred with their *bones*;
So let-it-be/ with Cæsar. The noble Brutus
Hath-told you-Cæsar/ was/ *ambitious*.

If it *were* so (*slight expression of doubt*), it was a *grievous* fault; and *grievously* hath Cæsar answered it."

This last line must be read in a deeper pitch and have an expression of solemnity and sorrow; for there lies the bleeding evidence of the penalty, and that appeal is the first inroad upon their animosity, the first appeal to their feelings.

But again return to the tone of obsequious respect; and the flattering compliment to the conspirators must be delivered as if the speaker *believed* what he said. Let the reader also, by a change of pitch, but not of time, indicate the brief digression, and the relation of the interrupted parts, "and the rest," with "Come I." The parenthetical clause must be delivered in a tone one degree lower.

But now he commences the course of triumphant argument by which he convinces his audience that Cæsar was not ambitious.

He-hath-brought many | *cáptives* | home to Rôme,
Whose ransoms did | the *gèneral* coffers fill."

The important word here is "general"; that while others appropriated the ransoms of captives to their own *private* coffers, Cæsar gave them to the public treasury, an evidence of liberality and patriotism. Inexperienced readers will emphasize "fill" or "coffers"; the first indicating that others only partly filled them, and the second that others put them into a different kind of receptacle. But Antony exalts Cæsar's munificence by saying: he gave *his* ransom to the *general* good.

"Did *thís* | in Cæsar | seem ambitióus?"

Some readers give the falling inflection to this question. If Antony is supposed to believe that his audience would answer in the negative, the falling inflection would be correct. But this is his first argument in favor of Cæsar,—he is not on safe ground yet; Cæsar may have shown that liberality to bribe the people. Besides which the falling inflecton would be too imperative in tone; the rising expresses homage to their judgment; it appeals to them, and for these reasons I prefer it.

"When | that-the-*pòor* | have-*cried*, *Caésar* hath wept: (*with feeling and tremor.*)
"*Ambition* | should be made of *stérner* stuff."

While the humanity of Cæsar is described in tremulous sympathy, the succeeding line, expressive of heavy censure on those who so unjustly murdered him, must be delivered with adequate solemnity and sternness.

"You all did see | that | on—the—Lupercal
I *thrice* | presented him—a *kingly* CROWN,
Which he did | *thrice* REFÙSE: was *this* ambìtion?"

This is the climax of the arguments. He had been murdered for aspiring to a kingly crown, and he had thrice refused it, and that gave indubitable evidence that he was not ambitious. It is true that Casca, in his blunt way, had said that "to *his* thinking, he was very loath to lay his fingers off it" when the crown was offered to him. But Casca testified that the people approved. "The rabblement shouted and clapped their chopt hands, and threw up their sweaty night-caps, &c." Hence the question, "Was this ambition?" should be given with a falling inflection on each word, with a full expectation of an answer in the negative. I may also add that the rising inflection recommended in the previous question gives greater effect to the altered inflection of this final question.

Antony has now achieved a triumph. He reads his success in the faces before him; probably whispers and tones of approval reach him; and so now when he names Brutus, on one word, 'sure,' he throws the emphasis and gives to the final words the rising inflection, which always expresses doubt or incompleteness,

"Yet, Brutus says he was *ambitious*;
And *sùre, (prolonged)* he is an *hònoráble mán.*"

The first great end of the oration has been achieved, and now, with consummate tact, knowing that success is only weakened by any effort to make it more successful, he re-awakens their affections—for they loved Cæsar—by tender rebukes and appeals which complete the triumphs of defence.

"You all did *lòve* him, once not without cáuse;
What cause withholds you then to *mòurn* for him?
O judgmént! thou art fled to brutish beasts,
And men have lost their reason."

The last two lines of this passage must be delivered with an expression of apparent sorrow. The speaker looks upward apostrophizing Judgment, but in this appeal, in while there is a rebuke conveyed, it is a flattering compliment to the passions of the multitude. They have judgment, but now carried away by misrepresentation and injustice 'men have lost their reason.'

There is also great skill exhibited in his temporary silence. He affects to mourn over the murdered Cæsar, and while silent, probably with his hands or his robes covering his face, he listens to the citizens, as they express their changing views on what he has spoken. The reading of their parts is as much a dramatic art and feature of the scene, necessary to its best effect, almost as the speech itself. It must be characteristic, rough and unpolished in style, varied in tone, and imitative of the utterance of such an assembly. This very contrast to the exalted and polished delivery of Antony will give the best effect to the change which must instantly mark the delivery of his first words as he recommences:

"But yesterdáy | the-word-of-*Cæsár* | might
Have-stood | against-the-*wòrld*:—now | lies he | *thère*,
And nóne só *poór* | to do him | reverènce."

The evident meaning of this passage is that he who was master of the world is now fallen so low that the meanest of that multitude will refuse to do him reverence. While the first two lines must be delivered with impassioned pride, in the fullest rotund and swelling tones, the second two lines are given with an expression of rebuking mournfulness. But in the delivery of the first two lines that follow,

"O másters | if I were disposed to *stir*
Your hearts and minds | to *mutiny* and *ráge*,"

The orator sweeps along with impassioned force as if he were going to stir them to avenge this cruel murder. Perhaps he was; but reflecting probably that this would be premature—that he has mightier arguments to advance; or perhaps seeing in the faces before him some still unfavourable expression, inimical to his final design, he skilfully changes his manner and tone to scorn and irony,

"I should do Brutus *wrông* and *Cassiùs* wrong,
(*emphasize "wrong" first and then "Cassius"*)
Who, you all knów, are *honŏrable* mèn;
(let the word "honorable" be delivered in slow mocking tone, with the full circumflex intonation)
I will not do *thĕm* | wróng: I rather chose
To wrong the *deàd (solemnly)*, to wrong *mysèlf* | and YÒU,
Than I will wrong—*such* HONORABLE mén."

In the delivery of the next passage the speaker again changes his manner, passion apparently is subdued, and with the exquisite skill of the practised orator who knows well how to make his next point tell, he refers, as it were incidentally, to the "will" whose importance is enhanced by this careless reference to it,

"But here's a pàrchment, with the séal of Cæsar,
I found it in his closet; 'tis his WILL."

The last three words are full of effect, in strongest contrast with the preceding by their very emphasis. Every ear must catch those important words, and all that follows must be given with distinctness, fervor, and point.

"Let but the commons | hear this *testamént*,
(Which pardon me I do not mean to *réad*;)"

This line must be read with an air of affected earnestness, as if he did *not* mean to read it, and which he *does* read afterwards with the best effect for his purposes.

"And they would go | and *kiss* dead Cæsar's *wòunds*,
And dip their *napkins* | in his *sacred blood*;
Yea, beg a HAIR of him | for *mèmory*,
And, dying, mention it within their *wills*,
Bequeathing it as a *rich legacy* | unto their *issue*.

The last three lines must be delivered slowly and with dignified and impressive effect, to enhance the importance of the will and to awaken the deepest interest in its contents.

But the remainder of the oration is so splendid in its eloquence and impassioned force, and in the skill of consummate oratory, that its review will justify another article.

BLACKBOARDS.

BY C. CLARKSON, PRINCIPAL HIGH SCHOOL, SEAFORTH.

Every school nowadays has one or more blackboards. It were waste of time at this late date to dwell on their usefulness, to demonstrate their capacity for multiplying the teacher's *effective* power. But there are blackboards and blackboards. My own experience, and the observations I have made in various schools, lead me to the conclusion that much benefit is lost by the very common neglect of a few particulars which in some way get entirely overlooked. I shall touch on a few of these points, and mention some of the practical remedies which I have found to be satisfactory on actual trial by myself and others. If any of these hints prove useful to some younger brother in the profession I shall be gratified, though I am not so sanguine as to hope that any of the veterans in our noble army will see fit to adopt any of the simple improvements suggested.

I. *Position.* The board should be placed in front of the class. This seems patent enough; yet go into many of the largest and best school buildings in this province, and it does not seem so simple after all; for in many central schools, collegiate institutes, etc., we find fine large blackboards placed at the sides or the rear, while near the teacher's desk is an insignificant apology, a mere remnant of a board, the only one easily visible by the school, and the only one conveniently and quickly available by the teacher. This of course is a direct discouragement to the use of this valuable aid. The fundamental error is in the seating of the room, and may generally be corrected at a very small expense. The seats in an ordinary class room, say 20x30, 18x24, or similar dimensions, ought to face the long wall, not the short one. The blackboard privileges thus secured far outweigh in my opinion any slight disadvantages (and I know of none) which might possibly be incurred. All the pupils are brought nearer the teacher and nearer the board, and the conveniency and efficiency are so much increased that I have never known any one wish to go back to the old arrangement after trying the one indicated. The room is often greatly improved by the change as regards light, by facing the pupils to the east or the north, and thus avoiding the bright glare which is so fruitful a source of shortsightedness in our schools. It is a further advantage to a *live* teacher to have his own desk placed at one corner, so as to leave the whole face of the board entirely unencumbered. To a piece of torpidity which hybernates perennially in its chair and hears lessons, this would of course be a great annoyance, since the machine might be put to the inconvenience of standing on its feet, and even walking about occasionally.

The board should be placed within two feet of the floor, and extend to the height of seven or eight feet from the floor. In many schools the whole of the blackboards are between three and four feet from the floor. The consequence is that a majority of the pupils are unable to use more than a foot or two of the lower edge. I have seen several large and expensive schools with every blackboard three feet six inches from the floor. In some of the junior classes, where the accommodation is most particularly required, only one or two pupils in the class could reach the board so as to use more than a few inches at the bottom. I know a $10,000 ward school in which not 5 per cent. of the pupils could reach the boards, though these are sufficiently numerous, and otherwise judiciously placed. One easy remedy is to place a narrow platform, 2 or 2½ feet high, under such boards. The better way is to have the board extended down. The fundamental error seems to be the educational heresy that the blackboards are all made for the teacher's use, whereas experience proves that there is no more efficient means of teaching classics, mathematics, science, almost anything in fact, than by sending a whole class to the board at once to do the same exercise, then getting them to point out each other's mistakes, and to receive the benefits of all the corrections; thus not only saving the time of the class and the labor of the teacher, but actually accomplishing more in a few minutes than could be done in hours by the individual method. Every school should, if possible, have accommodation for all the pupils at the blackboards simultaneously. No class will go to sleep over such exercises. To most pupils they afford great pleasure.

II. *Use.* The blackboard as commonly used is injurious to the health, especially to that of the teacher. I have often wondered how this has escaped the authors of books on teaching. We have abundant warning as to the unhealthful effect of stone-cutting, needle-grinding, grain-shovelling, etc., but I have never read a line or heard a sentence of caution as regards blackboards. I have watched teachers of infant classes, masters of public and high schools, tutors and professors in college, teaching their classes or lecturing to their students chalk in hand, speaking continually amid a dense cloud of floating chalk-dust, which at every breath passed directly to the delicate lung cells. What wonder that asthma is almost universal among aged teachers? Can the prevalence of consumption, bronchitis, &c., be considered remarkable among those who are breathing chalk-dust so constantly? The ordinary plaster of Paris crayons greatly aggravate the evil. To one engaged in teaching arithmetic or mathematics several hours a day, the consequences are inevitable. The prevalent mistake lies in the supposition that water applied to a blackboard will spoil it, whereas a good board is greatly benefitted by being well washed every day. If large slabs of slate could be secured, such as are used in some of the schools of Germany and of the United States, the dust nuisance would be avoided. It may be greatly abated by the careful use of the sponge. I have for ten years past constantly used a large sponge, or a ball of woollen cloth, which does not require wetting more than once, or at most twice a day. A very few drops sprinkled skilfully over the surface are sufficient to keep the dust down. No time is lost waiting for the board to dry, for one end is generally ready for use by the time the brush has reached the other. There is no reason in the nature of things for constantly inhaling this deadly dust, and suffering the consequences. If the damp sponge is kept at hand, the face of the

board kept free from accumulations, and brushes well dusted every day, the evil may be reduced to very small compass. The matter is worth the attention of all concerned.

As an indirect means of abating the dust, I may mention the use of *chalk* instead of plaster. Carpenter's line chalk is not quite so handy, but it is far less dusty than common crayons, and if cut into angular fragments with a knife is very convenient. Many blackboards are too rough, and wear the chalk far more than is necessary. Very little flour of emery or ground pumice stone is necessary in the coating. If care is taken to exclude every particle of oil or grease from the composition, a very small quantity of emery or pumice will give the board the requisite grittiness of surface. It would pay any teacher to recoat a rough board with a smoother finish, rather than suffer the effects of chalk dust. New boards may be polished with a smooth piece of hardwood or metal. Let any teacher observe, two hours after dismission, the thick covering of chalk dust which settles down on the desks and seats of an ordinary school-room on the afternoon of a cold day when the windows have been kept closed, and reflect whether the unavoidable impurities of school-room air are not sufficient without the addition of preventible ones.

HOW I MANAGE MY CLASS.

MRS. E. WALLACE.

The object of education is to develop and direct all the physical, mental and moral faculties; to produce a symmetry of growth and a harmony of action among all a child's powers, to give them force, direction, endurance and independence; we cannot, therefore, be too careful of the influence we exert, the habits of thought and action we aid them in forming, the practical use we enable our pupils to make of all they learn at school, and the impressions we make upon them in the management of our classes.

We have really as much to do with fitting them to fill well the different spheres in life as their parents.

We should teach them to be self-reliant and inventive, to utilize all the means within their reach, to economize time, strength, material and energy, and, in short, to make the very best use of all they hear, see and handle.

By carefully studying the different dispositions, their natural propensities to good and evil, we may, by encouraging the good, and teaching them to control and overcome the evil, help them to maintain the energy and rank of all their intellectual and moral faculties, qualify them to perform their various functions, and balance them so that they will act in concert.

As the heat and light of the sun, the winds and rains of heaven, promote the growth and strength of nature in trees and plants and bring out all their fair proportions, so we, as educators of youth, should guide, control and influence their minds so as to develop a healthy and vigorous growth.

We should not be satisfied with being in our respective rooms at a quarter to nine o'clock, mechanically going through the items marked out on our time-tables day after day, and dismissing with the doxology or the benediction when four o'clock comes, really manifesting more interest in the closing exercises than in any other portion of our work during the day. No need for wonder if there are frequent cases of truancy arising from a dislike for school, and a general lack of interest on the part of the pupils, where the teacher is not thoroughly in earnest in his work, and fully aware of the responsibility of his position.

I study my pupils, and, unnecessary as it may seem, by my actions invite them to study me. In this way we soon become acquainted and understand each other.

By my becoming interested in them personally, manifesting pleasure or pain as their actions deserve, they exert themselves to please me both in their lessons and general deportment.

I make it a point to reprove kindly, pointing out their errors in a serious light, trying to make them understand that wrong-doing in every form reacts upon themselves; and that they are alike the real sufferers whether they neglect their lessons or are guilty of a misdemeanor.

If necessary, I punish severely, but not for a first offence, and *never* without first convincing the offenders that I would be guilty of wrong, unworthy the trust reposed in me by their parents and School Board, if I allowed such conduct to be repeated without punishment.

I find that a few minutes spent *every morning* in talking with the little ones (mine is an eighth division) about "being good" has a beneficial effect. I do not recommend formal lectures on morality, but simple conversations about seeming *little* errors to shun, little works of love and duty to perform, the kind of impulses it will be safe to follow, and those from which to turn away. It is then we form plans for carrying out the day's work. I allow the children to give their own ideas, or rather *I lead them to express mine;* and believing that they have had something to do with to-day's plans, they feel a certain responsibility for carrying them out, and their importance in their own eyes in securing the success of to-day's lessons sets them to work in good earnest. This is not the only result—it forms the habit of thinking and planning for themselves, which will be worth a great deal to them in after life. And should not this be the direct aim of all our teaching? Should we not teach them to look beyond school-days for the harvest of their work in the school-room? School lessons should be only the means to an end away in the future.

We have all noticed how constantly and earnestly a new pupil watches us. He is quite indifferent to the appearance of his future class-mates; but he is measuring us in every turn we make, and before four o'clock comes he has made up his *little* mind as to how he can manage us. This is especially true in the case of troublesome pupils.

And this is the very best time we will ever have to make a good impression, to secure the respect and love of that pupil. Meet his inquiring scrutinizing looks with a smile, or a kind word, or a short explanation. Do not *exact* any work from him; tell him he may just look on to-day and see how nicely we get along in our room, and judge for himself how he is going to like to work with us.

Give him to understand that it will depend upon himself entirely whether we will keep him or not.

Find out which studies he takes most interest in, and before four o'clock comes have your mind made up as to how you can best meet him in his inclinations, disposition and temper. Let him see that, as one of your pupils, he is at once an object of interest to you. I find this a good plan, especially with wilful, troublesome boys; and it takes no time from the regular work of the class.

It is great help to have everything done in order, such as taking slates, books, pens, etc., and replacing them in a fixed way. The children should not be allowed to think that anything may be done carelessly in school. It saves the teacher a large amount of trouble and noise, and assists very materially in forming habits of neatness and despatch, which become rules of action for them in future years.

If it be true that "the boy is father of the man," how important that a good foundation for systematic work be formed in youth. How many more bright, pleasant homes we would see, particularly among the lower classes, if people knew how to make good use of

the means they have. So, many fail as men and women because they lack system and judgment. They seem to have no idea of executing anything without a waste of time, strength, and material. Now I hold that it *is*, and that it should be felt to be, a teacher's *privilege* to assist in remedying this lack—a privilege for which we will be held accountable. We, too, are gaining by the exercise of care in this respect, for in doing so we are gaining power over, and respect and love from both parents and children, without which our labor is in vain. Those of us who have asked the children to bring materials for learning to sew will readily see the need of reform in some homes.

We often make a serious mistake of finding fault with mere accidents. A slate falls, and we show very plainly by our looks, and too often in words not over kind, that we are annoyed. The offender knows that he had no intention of annoying, and a sharp reproof or a demerit mark at such times has the effect of discouraging good effort, and actually breeding repeated carelessness—"We must learn to control ourselves, if we would successfully control others."

In securing attention and interest, I find it essential to present the different subjects in a variety of ways. Going over the same course session after session, especially in the lower grades, is rather uninteresting to us; but the children, we must remember, are the ones to be benefited, and the work is new to them. We must keep interest warm by the desire to help the inquiring faces before us.

If I see them becoming restless, I stop work for a minute and lead them in rapidly performing some light exercises, or let them sing some lively song, as "Three Blind Mice," or tell them a story to make them laugh. Sometimes I get one of them to tell a story. I cannot explain why, but it is a fact that our pupils get the idea that they confer a real favor on us if they learn their lessons well. It is our place to show them their mistake. I tell them it is not going to make me any better, or wiser, or richer if they learn a great deal.

At the beginning of the session I give very short easy lessons, and get the pupils into the habit of coming with them well prepared. They get good marks, and soon feel so well satisfied that an imperfect lesson mark hurts them more than our "educational ointment," the new strap. Then we have an honor roll made up every Friday afternoon from names having no discredit marks. *I work as hard as they do to get their names on that roll.* It saves a great deal of trouble.

I stimulate them to effort by the reward in the effort itself; Teach them to aim high and press steadily forward, assuring them that no matter what sphere in life they fill, they may have the respect and confidence of all who know them. Whatever they undertake to do they must be sure to do well. Never shirk responsibility or despise small things.

I encourage them to express their views as to what practical use they expect to make of all they learn. For instance—What is the use of learning to add? Why do you study geography? Will it do you any good to excel in reading and spelling, or to be able to write well? From their own answers I make the strongest reasons for punctuality and regularity, for diligence and attention as the only means of progress. I try to make them understand that they are the big wheels, and their youthful opportunities all the other wheels which are necessary to run the machinery for building grand places for themselves as the men and women who are to fill all the spheres in life now occupied by their parents and teachers.

Some one says, "The highest aim of the primary teacher, and of all teachers, is the *education* of the child, the harmonious development of its nature." "Not the sum of the things learned, but the mental facility manifested by the scholars in thought, speech and writing, is the true criterion of the scholar's standing." "The scholar's final aim is not what he can *do*, but what he shall grow to be." "Morality has for its foundation firm habit, religious warmth of heart, and clear thought." Without the sympathy of the class, no teacher can successfully secure their best efforts.

I believe the strongest power we can have lies in the individual sympathy and interest we manifest in our pupils. Let them see that we, who are not related to them, who may not even meet them in after years, feel a deep interest in their progress, in the characters they are forming, the habits they are acquiring, and we have an untold influence over them, an influence which they will feel and be actuated by perhaps long after our voices are silent in death.

We are, often unconsciously, models for our pupils. If you do not believe it, just let them play school some noon hour when you are in charge, and if you do not see yourself in miniature, I am mistaken. I have tried it, and have been cured of serious mistakes which I was not conscious of making.

Would we stimulate them to a love for knowledge? We must love it ourselves.

Would we have an enthusiastic class? Set the example by being enthusiastic.

Would we have a gentle, loving class; showing love for each other, love for the work, and love for us? Again we must be the pattern.

Would we recommend diligence in the work, perseverance under difficulties and disappointment, and patience and self-control in all circumstances?

Then we must show the advantages of possessing these qualities by practising them daily; and these very qualities developed in the children become strong aids in the management of our classes.

I would be sorry to give the impression that there is no difficulty in carrying out these principles of action. Often discouraged and humiliated on account of seeming failures, disappointments and vexations, I can but resolve to "try again," taking courage from the Divine command and promise: "Cast thy bread upon the waters, for thou shalt find it after many days."—*Read before Toronto Teachers' Association.*

TEACHING SPELLING.

BY A. A. MILLER.

1. Arouse the pupil's pride. Let him once feel that bad spelling is a disgrace, and half the battle is won. Children should be taught to avoid a wrongly spelled word as they would a contagious disease. At the same time they should look on correct spelling as a matter of course, and as not, in itself, meritorious. A great cause of poor spelling is the very prevalent notion that it does not matter how a word is spelled so that its identity be not lost. When pupils learn that intelligent readers measure the culture of the writer of a letter by his spelling, the first great obstacle to teaching spelling is removed.

2. Spelling should be taught in classes as a separate study. It will do to depend upon other recitations in this particular, when it will do to teach reading in connection with the grammar class solely, or when the study of geography can be properly confined to the use made of it in teaching history. Not only should spelling be taught as a separate study, but lessons should be assigned in advance of the recitation, that opportunity to study them may be had. Primary pupils cannot study in a better way than to write the word of the lesson on their slates, and the words of the reading lesson should constitute the spelling lesson. When the lesson has been repeatedly copied from the book, let it be written from dictation and afterwards spelled orally. Care is to be taken that as few words as possible be misspelled, for errors are very liable to be repeated. Let words in common use be first taught; words to which pupils can attach some meaning, giving new words as their fund of information increases. Merely technical words may better be avoided until there is a need for them. Besides these

separate classes, all recitations should be, to a certain extent, recitations in spelling. When a new word occurs, have it spelled and defined. If this cannot be done, there is no use of the pupil who fails going further in that recitation until he consult the dictionary.

3. Pronunciation—that is, correct pronunciation on the part of the teacher—is a powerful aid to the study of spelling. In dictating words, many teachers are liable to pronounce so plainly as to be incorrect; each syllable being enunciated with labored distinctness, and an utter disregard of the laws of pronunciation. If the pupil is unable to spell a word, he has only to say that he does not understand it, in order to have it so pronounced as to leave no doubt as to its orthography. Of course, he will miss this same word the next time he has occasion to use it. Carelessness of pronunciation on the part of the pupils cannot be too carefully guarded against. We spell as we pronounce—to a great extent. If *part-i-ci-ple* be pronounced with three syllables, it will be spelled with three syllables; and if *perspiration* be pronounced as if the first syllable were *pes*, it will be spelled in like manner.

4. A fourth means to correct spelling is composition. A list of words is assigned for a lesson; the recitation to consist of the correct placing of these words in sentences. This is a very useful means of teaching the orthography and use of words pronounced alike, but spelled differently, and of different meaning. How often is the word *principle* used when *principal* is meant, and *vice versa?* So *cur-rent* is used for *cur-rant*, and the reverse. The argument for teaching the spelling of words only in connection with their meaning applies especially to this class of words. The spelling of each examination paper should be carefully scrutinized, and misspelled words noted. If it be understood that these efforts will affect the standing, carelessness in spelling will be effectually done away.

5. Good penmanship is a most efficient teacher of spelling. Many a person writes a word poorly because he is not certain of its orthography, and his penmanship prevents detection. A misspelled word looks worse when well written than if only scrawled. I have seen the word *to-geth-er* misspelled many times, but never did it look so utterly out of place as when it appeared in the rounded characters of a well-known writing teacher. A gentleman who stands high among the teachers of Wisconsin, in writing the diphthongs *ei* and *ie*, makes both letters exactly alike, and places the dot above and just halfway between them. There is nothing to be insisted on more strenuously than plainness of writing. It will prevent attempted deception as well as a great waste of time.

6. Rules for spelling have a place among the means of teaching this art. Just what their relative importance may be is a matter of opinion. Time spent in a mere memorizing of rules is time wasted. Yet this is just what many think to be their use. Their application to the spelling of certain classes of words may be very valuable, both as a means to correct spelling and a matter of discipline. The application of rules to the spelling of derivatives must be practised until it becomes habitual to the pupil, or the rules are of no account. But there is a large class of words that is above all rules, and that defies all law. Such words as *delible* and *indelible*; as *siege* and *seize*. The only way that I know to dispose of such words is to *learn* their spelling just as the multiplication table is learned. They must be taken by force and compelled to submit.

7. Pupils should keep a list of all misspelled words, and from time to time review them. Of course, the teachers will note all such words, and frequently bring them to the attention of pupils.

8. And last, but by no means least, let the habit of consulting the dictionary whenever any doubt arises, be formed as soon as possible—not an unwilling consultation, as is now usually the case, but a willing and cheerful search after truth. This habit cannot be over-estimated. If it be once acquired, there is little fear that misspelled words will find a place in any composition.—*New York School Journal.*

TEACHING LANGUAGE.

Many thousand years ago mothers and nurses discovered how to teach babies to talk. About other educational problems there may be doubt, but this one is settled; the one thing every human being, rich or poor, learned or ignorant, can do really well is to speak the tongue his mother taught him. Now, if pedagogues, instead of making children go their way, would only consent to follow the example set by the mothers, and teach as they do, or, in other words, would let children learn in the way in which nature meant them to learn, they might be successful, too; but they consider themselves wiser than nature, and therefore they fail. A mother does not begin by teaching her baby to spell before it can talk. She says, "I am mother;" and the baby understands perfectly, and tries, and after a while says "mother," and is delighted; and so learning to talk goes on with perfect satisfaction to every one. In view of these well-known facts, common sense would suggest making an effort to see if it is impossible to teach reading and writing in the same way; in perfect faith that if it can be done it must be natural. That it can be done with entire success the result of many different experiments has proved. The method is very simple. For example, the teacher, on the first day of school, draws a man on the blackboard, and then taking a little class of about a dozen children about her she asks them what she has drawn. They say "a man," and are interested at once. She then writes the word "man," and tells them that means "man," too. They understand immediately, and after she has rubbed it and re-written it a few times they learn to recognize it wherever they see it. Then while the impression is still fresh they are sent to their seats to see how good a man they can make on their slates for themselves. This is their first writing lesson, and though naturally the first attempts are not very successful, it is surprising how quickly children learn to imitate any word they see written, and with what never-failing interest and enjoyment they will copy words and sentences upon their slates. Every word they read they also write, and of course spell; for children would no more spell the word "man" wrong than they write it, after having learned to draw it in this way, than they would draw the man without his head. Indeed, the method of teaching spelling is a great feature of the system. If anything has been demonstrated by repeated failure, it is that teaching to spell English by ear is impossible. Nine out of ten of the people who speak the English language to-day, if they are in doubt how to spell a word, write it down to see how it looks; that is, they spell by eye, although the eye has never been trained to retain the shape of words. The object system spends its whole power on this training of the eye. From his first lesson, before he knows a letter, the child is taught to imitate the written shapes; he is taught to rely entirely upon the eye, and after he has learned his letters, and can spell orally, instead of drawing what were to him at first arbitrary signs, the same system is continued. Spelling is taught by dictation, and by exercises in writing original composition, until at length the eye retains naturally and without effort the form of every word that has been seen.

Meanwhile, orthography is learned. Having always seen sentences written beginning with a capital, it seems to the children a law of nature that all sentences should so begin, and accordingly they never think of writing otherwise. They learn in the same way what a question mark is, and what it means, and where it should be put, and so on throughout. Strangely enough, also, although the child has never been taught his letters, and only knows written words as signs representing objects, he finds no difficulty in recognizing the printed words when he sees them printed in a book.

The children who have learned to read from script upon the blackboard, when they are put into primers, go on with so little difficulty that the delay in the school work may be neglected. Every one knows, however, that the converse does not hold true, and that children who have first learned to read print do not read handwriting naturally. As time goes on another strange phenomenon takes place. Children begin to read new words at sight, without knowing their letters. They appear to have come to associate certain written signs with certain sounds, and to generalize just as they do when they learn to talk. No child, for instance, ever heard the word "gooder," yet the chances are he will say "gooder," and not "better," because he has learned by observation the rule for forming the comparative, but not the exception to the rule. So in learning to read he seems to recognize the force of the letters long before he knows their names. When this stage is reached the battle is won. After that children soon learn the names of letters for themselves; at most the teacher has only to spell the words aloud for a few days as she writes them on the board. The difficulty then is to supply the books. There is no danger that children thus taught will not love to read. Learning has been one long pleasure to them, because it gave a vent for their energy in work they thoroughly understand, which occupied at once their brains and their hands. They read childish books with

the same ease and the same delight that they talk childish talk, and the chief care of the instructor now should be to see to it that plenty of the right kind of reading is supplied : reading at the same time healthy and sound, and which shall lead to better things in the future.—*Atlantic Monthly.*

Examination Questions.

SECOND CLASS NORMAL SCHOOLS PROFESSIONAL EXAMINATION.

DRAWING.

March, 1880.—Time: One Hour.

Values.

10 1. Draw the "Greek Fret" moulding.
20 2. Draw a *Rosette* composed of simple curves on the diameters and diagonals of a square.
10 3. Draw a *Quatrefoil* on a square.
20 4. Show what you mean by *vertical repetition*, using conventional leaf and berry forms as elements.
40 5. Draw a design for *carpets* or *oilcloth* to illustrate symmetrial arrangement about a centre.

COUNTY OF WATERLOO—PROMOTION EXAMINATIONS.

MARCH, 1880—5TH TO 6TH AND 6TH CLASSES.

ARITHMETIC *(Full work required).*

1. Two houses, a barn and lot cost together $2337.40. The barn cost $\frac{1}{12}$ as much as a house, and the cost of a house was 3 times as much as that of the lot. Find the value of each.

2. On this day, viz., 23rd March, I receive $845 for a note of $860. When is the note legally due, interest at 8% per annum ?

3. A merchant buys $2645.50 worth of goods on 3 mos. credit, but is offered 3% discount for cash. Which is the better bargain, and how much, when money is at 7% per annum ?

4. A train having to perform a journey of 250 miles, is obliged after 103 miles to reduce its speed by one-fifth. The result is that the train arrives at its destination 1 hr. 10 min. behind time. What is its ordinary rate ?

5. Three daughters, Mary, Jane, and Ellen, are to share an estate of $80,000, in the proportion of $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, respectively ; but Ellen dies, and the whole amount is to be divided in a proper proportion between the other two. What share does each receive ?

6. Reduce to simplest form—

$$\frac{44\frac{3}{8} \text{ of } \cdot 056 - 3\cdot 04 \text{ of } \frac{4}{15}}{(8-2\cdot 4)+\frac{2}{9} \text{ of } 3\frac{3}{5}} \times \left\{ \frac{3\frac{1}{13} \text{ of } \frac{1\frac{6}{7}}{\cdot 3} - 1}{\cdot \frac{3}{7}\frac{8}{6} + 5\frac{2}{7}} + 2 \right\} \times \frac{28\frac{5}{51}}{}.$$

7. What is the length of the shortest rope by which a horse may be tied to a post in the middle of a field 20 rods square, and yet be allowed to graze upon every part of it ?

8. Mr. Smith paid $3\frac{1}{4}$ times as much for a horse as for a harness. If he had paid 10% less for the harness and $7\frac{1}{7}$% more for the horse, they would together have cost $245.40. How much did he give for each ?

5TH TO 6TH AND 6TH CLASSES.

GRAMMAR AND COMPOSITION.

'Tis the *mind* that makes the body *rich* ;
And as the sun breaks through the darkest clouds,
So honour *peereth* in the meanest habit.
What ! is the jay more *precious* than the *lark*,
Because his feathers are more beautiful ?
Or is the *adder* better than the eel,
Because his painted skin contents the eye ?

NOTES.—1. Leave construction lines in *every* instance.
2. Use of instruments allowed.

1. Divide the foregoing passage into propositions : state their kind and relation, and analyze each.

2. Parse the words in italics in the same passage.

3. Explain what is meant by gender, complex sentence, etymology, preposition, mood, co-ordinate proposition.

4. Write sentences showing the several ways in which "who" and "that" are used.

5. Parse the words in italics in the following lines :—

No blinder bigot, I maintain it *still*,
Than he who must have pleasure *come what will*.

6. Give the infinitive present, the present participle and the past participle of the *intransitive* verbs corresponding to "raise," "set," "lay," and "fell."

7. Explain the derivation of "hydrogen," "grandiloquent," "hesitate," "cosmopolite," "autograph," "villain," "parent," "analyze."

8. Distinguish between—

You like him better than I,
You like him better than me ;

and

He made a better soldier than poet,
He made a better soldier than a poet.

9. Transpose into prose.

THE BANIAN TREE.

Branching so broad and long that in the ground
The bended twigs take root, and daughters grow
About the mother tree, a pillared shade;
High overarched with echoing walks between,
Where oft the Indian herdsman, shunning heat,
Shelters in cool, and tends his pasturing herds.

10. Write an essay on any one of the following topics :—

American War of Independence.	Duke of Wellington.
Battle of Waterloo, 1815.	Napoleon I.
Abolition of Slavery, 1833.	Indian Mutiny, 1857.

5TH TO 6TH AND 6TH CLASSES.

ENGLISH HISTORY (Brunswick Period).

1. Who, on the death of Queen Anne, was direct heir to the throne ? Mention some of the provisions of the Act disqualifying him, and show the claims of George I.

2. Write notes upon each of the following :—Robert Clive, the younger William Pitt, George Stephenson, and Daniel O'Connell.

3. Give a short account of the struggle for supremacy between the English and French in North America during the reign of George II.

4. Mention some of the results of the first French Revolution in so far as England was concerned.

5. What is meant by the terms—National Debt, Sepoys, Free Trade, Holy Alliance, Corn Laws, Catholic Emancipation ?

6. What were the evils which it was intended the Reform Bill of 1832 should remove ? Who introduced the Bill in the Commons ?

5TH TO 6TH AND 6TH CLASSES.

GEOGRAPHY.

1. Distinguish between the Diurnal and Annual Motion of the earth, and state the results of each.

2. Give a short description of the geographical position, extent and physical features of the North-West Territory, and the District of Keewaydin or Keewatin.

3. Describe the railroad system of Ontario.

4. Through what waters would a vessel pass in going from Halifax to Duluth *via* St. Lawrence route ?

5. Draw the south coast line of Asia, from Isthmus of Suez to Hong Kong, marking off British India and Afghanistan, and naming the principal capes and mouths of the chief rivers.

6. What, and under what government are Jamaica, Minorca, Natal, Tyrol, Iceland, Hungary, Singapore, Teneriffe, Balize, Siberia.

7. Name the cities on the following rivers:—Clyde, St. Lawrence, Rhine, Hoogly, Tagus, Hudson, Seine, Potomac, Rhone, Mersey.

4TH TO 5TH CLASS.

ARITHMETIC (*Full work required*).

1. A town lot was sold for $1,728, at $3 per 8 sq. ft. The front of the lot is 48 ft. What is its depth?

2. If it requires 8,400 yds. of cloth $1\frac{1}{4}$ yd. wide, to clothe 3,500 soldiers, how many yards $\frac{7}{8}$ wide will clothe 6,720?

3. Multiply 392,756 by 714,095 in three lines of partial products.

4. What is the value of

$$\left\{\frac{\frac{2}{3}\text{ of }7-2\frac{2}{5}}{1\frac{3}{4}+3\frac{3}{5}\text{ of }\frac{5}{12}}\right\}\div\left\{\frac{.0\dot{4}\dot{8}}{.\dot{8}}\text{ of }.5\dot{3}\text{ of }8\tfrac{1}{3}.\right\}$$

5. *A*, *B* and *C* together can dig a ditch in 4 days. *A* can dig it alone in 10 days; *B* can dig it alone in 12 days. How long will it take *C* to do it alone?

6. At 7 % the interest of $480 is equal to five times the principal. How long has the money been on interest?

7. A certain garden is $12\frac{2}{3}$ rods long, and $9\frac{1}{4}$ rods wide. At $2\frac{1}{2}$ cents per cubic foot, what will it cost to dig a ditch around it that shall be $3\frac{1}{2}$ feet wide and 4 feet deep?

8. The ridge of the roof of a building is 44 ft. long, and the distance from each eave to the ridge is 19 ft. 3 in. How many shingles 4 inch wide, laid $5\frac{1}{2}$ in. to the weather, will be required to roof the building, the first row being double?

4TH TO 5TH CLASS.

GRAMMAR AND COMPOSITION.

Note.—When the pupils of this class (4th to 5th) have had this paper one hour and a half, the Examiner will read to them the "Anecdote of the Wolf," page 145, Third Reader, from "a few years ago" to end of lesson.

1—Analyze the following—

That which neither threats nor imprisonment, the scourge nor the chain, could effect, was accomplished, and rapidly, by the influence of love, though its object was one of the most despised among animals.

2.—Parse the words of the following sentence—

The genius making me no answer, I turned about to address myself to him a second time, but I found he had left me.

3. What is meant by the terms—inflection sentence, proper noun, predicate, noun in apposition?

4. State clearly the distinction between simple, complex, and compound sentences.

5. Correct the improper use of adverbs and adjectives in the following—

It was a terrible nice party. The singing was gorgeous, the music magnificent, and the company generally awfully pleasant. I wonder what made John so fearfully quiet, when everybody else seemed to be in such splendid spirits.

6. Derive the following words and give the meaning of the roots, prefixes and affixes—conjecture, humanity, difficult, infirmary, remunerate, ashore, extract, sinecure, assimilate, obdurate.

7. Change the voice of all the verbs in the following sentences:

The General led the attack in person.
This exercise was written by one of the pupils.
We may expect a calm after a storm.
Few know the value of health till they lose it.
He was immediately arrested by a detective.

8. Transpose into prose—

——Nature's care to all her children just,
With richest treasures, and an ample state,
Endows at large whatever happy man
Will deign to use them.

9. Re-write, in your own language, the portion of the "Anecdote of the Wolf" you have heard read.

4TH TO 5TH CLASS.

ENGLISH HISTORY (Brunswick Period).

1. Give the name and date of accession to the throne of each of the Sovereigns of the House of Brunswick.

2. What great political party ruled the country during the first reign of this period? Mention three or more of the leaders of this party during that time.

3. Tell what you know of "The Seven Years' War."

4. Explain the terms—Jacobites, House of Commons, Cabinet or Ministry, Universal Suffrage.

5. Who was King, and who Prime Minister, at the time of the American War of Independence? What led to this war?

6. When did the parliamentary union of Great Britain and Ireland take place? For how long had Ireland enjoyed an independent parliament?

7. Give a short sketch of "The Peninsular War."

8. Tell all you know of Lord Nelson.

4TH TO 5TH CLASS.

GEOGRAPHY.

1. Describe, as minutely as you can, the boundary line between Canada and the United States, beginning at Juan de Fuca Strait and ending at Passamaquoddy Bay.

2. Name the chief rivers of Europe, the countries through which they flow, and the waters into which they empty.

3. What and where are Honolulu, Cobequid, Kandahar, Ben Nevis, Warsaw, Restigouche, The Wash, Archangel, Cotopaxi, The Hebrides?

4. Draw a map of Africa south of the Equator. Make it as complete in every particular as you can.

5. Name and give a short description of each of the four great mountain systems of N. and S. America.

6. Name the States on the east and west banks of the Mississippi, also those bordering on the Atlantic Ocean, with their capitals.

N. B.—In answering these questions, the pupils should tabulate as much as possible.

READING—ALL CLASSES.

Any two or three sentences of the following:—

It is pleasing to contemplate a manufacture rising gradually from its first mean state, by the successive labors of innumerable minds: to consider the first hollow trunk of an oak, in which, perhaps, the shepherd could scarce venture to cross a brook swelled with a shower, enlarged at last into a ship of war, attacking fortresses, terrifying nations, setting storms and billows at defiance, and visiting the remotest parts of the globe. Who, when he saw the first sand or ashes, by a casual intenseness of heat, melted into a metalline form, rugged with excrescences and clouded with impurities, would have imagined, that, in this shapeless lump, lay concealed so many conveniences of life, as would, in time, constitute a great part of the happiness of the world? Yet, by some such fortuitous liquefaction, was mankind taught to procure a body, at once, in a high degree, solid and transparent,—which might admit the light of the sun, and exclude the violence of the

wind :—which might extend the sight of the philosopher to new ranges of existence ; and charm him, at one time with the unbounded extent of the material creation ; and at another with the endless subordination of animal life :—and, what is of yet more inportance, might supply the decays of nature, and succour old age with subsidiary sight. Thus was the first artificer in glass employed, though without his own knowledge or expectation. He was facilitating and prolonging the enjoyment of light, enlarging the avenues of science, and conferring the highest and most lasting pleasures: he was enabling the student to contemplate nature, and the beauty to behold herself.

4TH TO 5TH CLASS.

DEFINITIONS AND QUESTIONS on Reading Lesson above.

Explain the meaning of (1) contemplate, (2) gradually, (3) successive, (4) fortresses, (5) billows, (6) remotest, (7) concealed, (8) transparent, (9) violence, (10) philosopher, (11) material, (12) subordination, (13) succour, (14) artificer, (15) facilitating, as used in the lesson.

Re-write the following, and for italicized words use their meanings :

(16) Labors of *innumerable* minds.
(17) By a *casual intenseness* of heat.
(18) What is yet of more *importance*.
(19) Might *supply* the *decays* of nature.

5TH TO 6TH CLASS.

Re-write Nos. 1 to 7, and for italicized words use their meanings. Answer the questions in the remainder.

(1) Setting *storms* and *billows* at *defiance*.
(2) Melted into a *metalline* form, *rugged* with *excrescences*.
(3) Lay *concealed* so many *conveniences* of life.
(4) By some such *fortuitous liquefaction*.
(5) *Succour old age* with *subsidiary* sight.
(6) *Enlarging* the *avenues* of *science*.
(7) He was *enabling* the *student* to *contemplate nature*.
(8) Parse "enlarged," line 4 ; "who," line 6, and "beauty" in last line.

To what instruments and to what uses to which glass is put does the author refer in each of the following cases :

(9) Which might admit the light of the sun, and exclude the violence of the wind ?

(10) And charm him, at one time with the unbounded extent of the material creation ?

(11) And, at another, with the endless subordination of animal life ?

(12) Might supply the decays of nature, and succour old age with subsidiary sight ?

(13) And the beauty to behold herself ?—last line.

ANSWERS TO QUERIES.

SUBSCRIBER, *Royal Road, Douglas.*—For work required for second-class certificates in Ontario, see CANADA SCHOOL JOURNAL. —For Manitoba, see article by Rev. C. Pinkham in present issue.

2. Teachers are paid in full by the Boards engaging them in Ontario. Salary for such as you describe, 400 to 500 dollars.

3. A candidate regularly licensed in New Brunswick could at once apply for the same grade in Ontario.

E. H. BLACK.—The school holidays in Ontario extend in summer from the 8th of July to the 17th of August inclusive, and in winter from the 24th of December to the 2nd of January inclusive, (Trustees may reduce the summer holidays to four weeks, if they can get teachers to teach for them on those conditions.)

H. R. P., *Hillsdale.*—Roman history for second-class candidates extends to the close of the second Punic War.

S. K., *Castleton.*—The marks necessary for 2nd B, are 20 per cent. on each subject, 40 per cent. on each group, and 50 per cent. of the whole number obtainable ; for 2nd A, "30 per cent. on each subject, 50 per cent. on each group, and 60 per cent of the aggregate of total marks." Those given in last number were slightly incorrect.

G. M., *Lucknow.*—See Official Dept. of this number of the JOURNAL.

D., *Kingston.*—1. A teacher does not pay his superannuation fee if he is not teaching.

2. You should state, when making your application for examination, where you wish to write.

3. It will not be necessary to have a third-class certificate renewed in order to attend the Normal School.

4. Roman History (see above).

X. Y. Z.—You may shorten your University course one year by taking senior instead of junior matriculation examination.

2. Study Mason's Grammar carefully.

W. J., *Creighton.*—The Latin for 1880 for Second Class Certificates is the Accidence and the Principal Rules of Syntax and Prosody ; Exercises ; Cicero in Catilinam, II, III, IV., and Virgil, Re-translation into Latin of easy passages from Cicero.

Subscriber.—Candidates for First Class are not examined in Botany, Bookkeeping or Physiology.

M. E. C., *Ballymote.*—No percentages are fixed for 1st class certificates.

VERDANT GREEN.—Write for Curriculum to Dr. Geikie, or Dr. Frederick Wright, Toronto.

2. For time table consult your own Inspector.

Exchange Department.

In this department questions submitted by teachers will be inserted, that they may be discussed by those who are desirous of either giving or receiving light in regard to them.

The last paragraph of the replies sent by "H.C.C.," in the March JOURNAL, was rendered meaningless by the printer, who made "*The While*" appear as "*The Whole*," and omitted the sign of equality (=) after the words "*The While*" in each place where they occur.

In the Third Reader the lesson on The Vision of Mirza contains the following, "The sound of it was *exceeding* sweet." How should the word in italics be parsed ?

What does Mason mean by "Notional Verbs" ?

In the sentence "*This* is *my* book," are the words in italics pronouns or adjectives ? SUBSCRIBER.

A board is 12 feet long, 1 inch thick, 18 inches wide at one end and 12 inches wide at the other. How will you proceed to divide it into *two* equal parts (that is, by cutting *across* the board) ; and how much lumber will each half contain ?

How do you tell the "Gerund" from the Infinitive, and how do you parse the Gerund ? TEACHER.

"BUT."

In this age of progress and rapid development in civilization, people are beginning to find out that our forefathers knew compar-

atively nothing, and in no branch is this illustrated better than in grammar. Lennie, among his conjunctions, has two, '*and*' and '*but.*' '*And*' is a conjunctive conjunction, '*but*' disjunctive. But now '*but*' is parsed as a preposition in such sentences as: "When all *but* HE (they correct it, HIM) had fled." They say: substitute '*leaving out*' for '*but,*' and as '*leaving out*' is a preposition, '*but*' is. They say it makes good sense. Outwardly it looks so. But it neither expresses what is meant, nor is there a particle of sense in it, as it is impossible. Let us take the sentence as it would be corrected: "When all, *leaving out him*, had fled." Now, if '*leaving out*' is a preposition, him is in the objective, and the subject of '*had fled*' is *all*. But '*all*' is not the subject, for *all* had not fled. Then '*him*' is a part of the subject, which I would for the moment call the negative subject. But the subject must be in the nominative, therefore '*him*' must be '*he,*' and the word connecting it with '*all*' must be a conjunction and not a preposition, so if '*leaving out*' is a preposition, it is wrong, and the word '*but*' is not equal to '*leaving out,*' but to a conjunction, wherefore '*but*' is a conjunction.

I wish to show another reason, which ought to prove it beyond doubt. The meaning of the sentence: "When all, leaving out him, had fled," is this: Originally there was a number of persons represented by '*all,*' and a person represented by '*him*' on board the ship. But '*all*' fled, and '*him*' did not. So '*but*' as a conjunction subtracts '*he*' from '*all,*' while as a preposition, '*him*' originally a distinct person added to '*all,*' is taken away, and '*all*' is left, which is not the case. In the sentence: "The captain and crew fled," we mean that the *captain and crew* were the subjects who fled. But if we substitute for '*and,*' '*with,*' then the sentence becomes: "The captain, with the crew, fled." Or: "The captain, adding the crew, fled." Now a difference between this and its original sentence is that whereas, in the first, 'the captain and crew' is the subject, in the last 'the captain' is. That is, the captain fled while the crew accompanied him. We express that the captain fled, and 'with the crew' is but a parenthetical phrase. With '*and*' we say that both the captain and crew fled, which is a different statement, and so in changing '*but*' into '*except*' we have a difference also.

Again, in the sentence $x + y$ fled, $x + y$ is the subject of 'fled,' and so they can be connected by the conjunction '*and,*' which is x and y fled. And 'x' equalling the captain and 'y' the crew, the captain and crew fled. Or, with $x - y$, let $x =$ '*all*' and y '*he.*' Then 'all' minus 'he,' or 'all but he' is the same as $x - y$. But if we substitute '*leaving out*' for '*but,*' it implies that there is an original quantity $x + y$, and leaving out 'y' we have x as the subject.

There are many examples in English classics where '*but*' is followed by a nominative, as in Shakespeare, and which go for as much as the author is worth. So I conclude that '*but*' is only what you might call the negative of '*and,*' as 'minus' is to 'plus,' and that as in the example I have cited '*but*' is a disjunctive conjunction.

H. P. B.

Notes and News.

ONTARIO.

The Peterborough School Board have not quite recovered from their economical (?) craze.

Listowel School Board is making matters lively. Nearly the whole staff has left during the past year, on account of reductions in salaries. They have a heated discussion regarding the appointment of Inspector; and have at last succeeded in awakening a decided interest in school matters generally in the ambitious town. One of their teachers having resigned at the close of the first session of 1879 to take a school in Toronto, the trustees refused to pay her for the midsummer vacation, and were sustained in their action by the Education Department. She pluckily carried the matter into court, however, and of course won her case.

Peterborough Collegiate Institute has formed a Drill Association.

Creighton's Epoch Primer of English History has recently been adopted by the School Boards of London and Toronto.

Guelph has established a school for senior girls.

At the close of the Session of the Parliament street night school in Toronto, the Principal, Mr. Wm. Nattrass, and the first assistant, Mr. R. T. Martin, were the recipients of handsome presents from their pupils.

The School Board in Sarnia has decided to plant shade trees in the grounds of their schools.

Rev. T. D. Phillips, M.A., mathematical master in the Collegiate Institute, Ottawa, has been forced by ill health, induced by overwork, to retire for a time from active work.

The Baptist denomination has purchased a lot in rear of University College, Toronto, and intend erecting a Divinity Hall thereon, the students of which will take their literary training in the Toronto University.

At the last monthly meeting of the St. Catharines teachers, an illustration was given by Miss Darche, mistress of St. James' Ward School, of the nature of physical training for children, accompanied by explanation of the uses of the various movements, and arguments in support of the system. A resolution was unanimously passed by the teachers that these exercises shall henceforth form a part of the daily work in each of the City Schools.

The following candidates obtained second class certificates at the late professional examinations at the Normal School, Toronto:—

MALES.—Thomas Ballantyne, Alfred Cole, John Cole, Wm. Colvin, Llewellyn Frank Cutten, Wm. Hay, Daniel C. Hetherington, Henry Horton, Wm. Irwin, Andrew Kerr, George McI. Kilty, Joseph Matthews, Wm. F. Mills, John McKay, George McKenzie, Wesley Newell, George A. Peters, Alexander Keith, James Robertson, Thomas G. Shillinglaw, Robt. Smith, James B. Standing, Thos. Stevenson, Simon H. Swartz. James F. Williamson, Cyrus Witmer.

FEMALES.—Sarah Cameron, Emma M. Cheney, Caroline Clifford, Charlotte Colmorgan, Victoria A. Creasor, Annie K. Creen, Katherina Durrach, Catherine Dobie, Mary A. Dunn, Mary J. Elliott, Sophy Fox, Maria Hall, Christina Hardy, Margaret L. Harrison, Minnie R. Hay, Susanna Howden, Grace D. Kay, Mrs. Dora A. Kesner, Elizabeth Knowles, Ida K. Long, Julia Lewis, Sarah Loudon, Ina Meston, Jennie McGlashan, Jennie McLellan, Helena Patterson, Alexina Reid, Lydia Sheppard, Agnes Steedman, Lydia H. Thatcher, Mary R. Trout, Margaret L. West, Margaret H. Wilson, Helena Wilson.

At the distribution of prizes by the Ontario Art School in Toronto on April 24th, the gold medal was given to Miss B. Walker, of Belleville, and the silver medal to Mr. Geo. Reid, of Wingham. J. Lawson, Toronto, won the prize for ornamental design in outline drawing, and F. W. Jopling, Toronto, the prize for time outline from antique cast. Mr. John T. Willing, Toronto, received the prize for charcoal time sketching, and also Mr. Goldwin Smith's prize for Christmas cards, Canadian subjects.

We clip the following from the report of Mr. G. D. Platt, Inspector of Schools in Prince Edward Co.:

TEACHERS' CERTIFICATES AND SALARIES.

Of the 85 teachers employed, 21 had attended a Normal School, 23 held second class certificates (Provincial), 3 first class old country Board, 55 third class and four interim certificates. Several teachers obtained second class certificates during the year, and the number will doubtless increase in future.

The average salary of male teachers was $368, and of female teachers $256. In Ameliasburgh the average was $407 and $261 respectively, Athol $336 and $270, Hallowell $373 and $272, Hillier $393 and $259, N. Marysburgh $327 and $243, South Marysburgh $332 and $240, Sophiasburgh $365 and $250. Wellington paid its Principal a salary of $575.

ATTENDANCE.

The number of pupils enrolled was 4697, and the average attendance for the first half of the year 2320, or nearly 50 per cent. The average for the whole year was not quite 46 per cent.—a slight decrease from 1878, probably owing to the severe weather and extensive snow drifts of the past year, which kept many of the junior pupils at home. The principal drawbacks are irregular attendance, and the too frequent changes of teachers. Parents are mostly to

blame for the former, and the temporary character of the certificates of many teachers has much to do with the latter. This is being gradually remedied, and, as the number of permanent certificates increases, will no doubt become less and less.

NOVA SCOTIA.

A Teachers' Association for Annapolis County was organized at Lawrencetown, on the 29th ult., under the superintendence of L. S. Morse, Esq., A. M., Inspector of Schools for District No. 4. The programme of exercises was varied and interesting, and the proceedings throughout in the highest degree acceptable. Next month's notes will contain a detailed report.

The Provincial *Journal of Education* for April contains the text of the Educational Act passed at the recent Session of the Legislature. In adition to minor amendments, it introduces important changes respecting the duties of Commissioners and the power of Inspectors. The grants to County Academies are to be henceforth to a certain extent conditioned on the amount raised by local effort.

It is announced that henceforth the tests of Examination for each Grade of License will be uniform for all classes of candidates. For a few years past, Graduates of Colleges, applying for the Academic License have been required to pass only the examination on professional subjects.

The Convocation of Dalhousie College was held in the Assembly Room of the Province building on the 21st ult., in the presence of a very large gathering of ladies and gentlemen. The proceedings were opened with prayer by the Very Rev. Principal Ross, who followed the prayer with a short address, in the course of which he referred in touching terms to the late Prof. DeMill, by whose death he said not only the college, but the city and the Dominion as well, had suffered. He then referred to the number of students during the term closed, nearly a hundred, and closed his remarks by saying that he had received a letter from Sir Wm. Young stating that, owing to illness, he was unable to attend. After the reading of the customary Pass List, and the presentation of Certificates of Merit by the Secretary of the Senate, Prof. Charles McDonald, to those who had merited this mark of distinction, the various University prizes were presented by the Professors of the classes in which they had been won, and the other prizes by the Principal. The graduating class, consisting of the following gentlemen,—Edwin Crowell, Albert E. Thompson, and Frederick S. Kinsman, in Arts, and W. M. Frayer in Science,—was then presented by Professor Lawson to the Principal, who conferred upon them their degrees, and addressed them afterwards. He first referred to the smallness of the class, and said they need not expect a lengthy address. He did not estimate the value of the work done by the smallness of the number of students. If five students were turned out thoroughly trained and equipped for the world, he thought the mission had been better filled than if they sent out fifty scilists or pedants. The valedictory was then delivered by Mr. Thompson.

Rev. G. W. Hill, D.C.L., Chancellor of the Halifax University, having been called on for an address, responded in eloquent terms. After a brief consideration of the proper location of Collegiate Institutes, and a reference to the benefits reaped by the City of Halifax from the presence in her midst of such a distinguished University as Dalhousie, the learned Chancellor, alluded in modest and fitting terms to the peculiar position occupied by the Halifax University. He vindicated in an able manner the utility of a general Examining Institution, such as the University is, in one of its chief functions, intended to be. The concluding portion of his remarks was of a highly practical character, dwelling on the importance of enlisting the energies of our educated classes in developing the resources of the country.

The following are the Examiners in Arts of the University of Halifax for the current year :

Classics,—Prof. Smith, A. M. (Mount Allison), and Prof. Wilson, A. M. (Kings.)

Mathematics and Physics.—Prof. A. G. McDonald, A. M. (St. Francis Xavier), and Prof. Eaton, A. M. (Provincial Normal School.)

English Language and Literature.—President Inch, LL. D. (Mount Allison), and Prof. Currie, A. B. (St. Mary's.)

French and German.—Prof. Liechti (Dalhousie), and F. C. Sumichrast, Esq.

Hebrew.—Rev. Prof. Stewart, D. D. (Mount Allison), and Rev. Prof. Currie (Presbyterian Theological Hall.)

Chemistry.—Prof. Lawson, Ph. D., LL. D., F. J. C. (Dalhousie), and Prof. Spencer, B. A. Sc., A. M., Ph. D., F. G. S. (Kings.)

Logic and Philosophy.—Very Rev. Dr. McKnight (Presbyterian Thelogical Hall), and Rev. R. McDonald, A. B.

Constitutional History and Political Economy.—Hon. L. G. Power, B. A., LL.D., and John Y. Paygant, Esq., A. M.

NEW BRUNSWICK.

The right of women to the same Educational advantages as the sterner sex is gradually gaining practical recognition everywhere. Their claim, or the claim made for them, is very generally admitted in theory ; but we have only to compare the number of seminaries and colleges for ladies, or open to both sexes alike, with those open solely to men, to see how much remains to be done in the way of acknowledging the claim practically. Every year sees progress in the right direction, however, and New Brunswick is not to be behind other countries in the matter. The Senate of the Provincial University recently enacted the following Statute relative to examinations for women:

Examinations for women in certain of the subjects of the Faculty of Arts may be held at Fredericton or elsewhere in the Province, according to the regulations hereinafter prescribed.

1. Candidates will be admitted to a first examination, embracing the subjects of the Matriculation Examination, and will be examined in all the subjects required for such examination. French, however, may be substituted for Greek.

2. Candidates will be admitted to a further or second examination, embracing the subjects of the Course for the Freshman Year ; but Hygiene and the rudiments of Vegetable and Animal Physiology and Morphology may be substituted for Greek.

3. Candidates, on passing each of the above examinations, will be entitled to a certificate bearing the Seal of the University.

4. No candidate will be admitted to the First Examination unless she has completed the fifteenth year of her age ; nor to the second examination unless she has completed the sixteenth year of her age.

5. Every candidate who proposes to present herself at an examination must give notice of her intention to the Registrar of the University at least four weeks before the commencement of such examination ; and said notice must be accompanied by a fee of three dollars.

6. Both the First and Second Examinations will be held each year at the University, on the opening of the term in September. But should not fewer than four candidates have given timely notice of their wish to be examined at any other central locality in the Province, the Senate will endeavor to make such arrangements with the local Trustees of Schools, or others, as will enable them to hold a simultaneous examination in that locality.

This is the season for changes of teachers, which, especially in the country districts, where many male teachers give place to female teachers in the Spring, are far too numerous and frequent for the good of the schools and of the country. The existing regulations with regard to the classification of schools by Inspectors are so framed as to discourage these changes, and promote permanency in the location of teachers.

Among the resignations that have come to our knowledge, to take effect on the first of May, are those of L. A. Curray, M. A., Principal of the Queen's County Grammar School ; Alex. Johnston, B. A., of the Winter Street School—(the department in his charge being closed) ; A. D. Smith, of Indiantown ; Miss Laura Hughes, of the Leinster Street School, St. John ; Miss Katharine R. Bartlett, of the Model School, Fredericton, who takes Miss Hughes' place ; Robt. M. Raymond, B. A., Principal of the Park Barrack Schools, Fredericton ; and A. E. Wortman, B. A,, Principal of the York Street Schools, Fredericton. Mr. Wortman goes to Salisbury, Westmorland, and his place is taken by Jas. R. Mace, B.A., recently of Springfield ; Mr. Raymond will be succeeded by Berton C. Foster, B. A., recently of Andover ; and the third Department of the Model School, vacated by Miss Bartlett on account of her appointment in St. John, will be placed in charge of Miss Ellen M. Freeman, Silver Medallist of the Normal School.

Leave of absence has been given to Miss Minard, who has so long successfully taught the Primary Department of the Model Schools, and to Miss Frances J. Ross, and Miss Frances N. Seely, of Fredericton Schools. Their places will be filled by Miss J. R. Bateman, Miss Alice Meagher, and Miss Annie T. Moore.

The fine School-house at Gibson, York Co., was accidentally destroyed by fire on the 24th of March, at noon. This was the second school house burned on the same site, having been erected in 1876 to replace the first one, destroyed by incendiarism. The building was insured for $1000, about one half its cost. The furniture was saved. Until the proposed new building is erected, the schools are separated,—Mr. R. H. Davis and Miss Staples teaching in the Hall at Gibson, and Miss Marsh at St. Marys.

At the Provincial Examination held in March, there were five candidates for Grammar School License, two of whom obtained that Class, and three obtained 1st Class. Of thirteen who worked for 1st Class License, 10 obtained it, 1 obtained 2nd Class, and 2 failed to obtain any Class. For the 2nd Class there were 127 candidates, of whom 90 obtained the class sought, 31 obtained 3rd Class, and 6 failed entirely. 23 worked for 3rd Class License, and all of them passed the test. Thus 125 out of the whole number (168) examined, succeeded in gaining the class of License sought for. 133 of the candidates had been in attendance at the Normal School the past Session, and only 26 of these, or 19½ per cent., were unsuccessful; while 17, or nearly one half of the remaining 35, failed to get what they sought. Of those who worked at the First Class papers, the highest average was made by Miss Ellen M. Freeman and Mr. E. W. Stevens. The highest among the Second Class candidates were Miss Julia Cairns, of St. John, Miss Jane Price, of Woodstock, and Miss Maud Narraway, of St. John. The highest averages on the third Class papers were made by Miss Annie Young, of Stanley, and Mr. Joseph D. Le Blanc, of Memramcook. Forty five of the 168 candidates are reported as having made no mistakes in the spelling of common words, and a large number had only one word marked against them, six had misspelled ten words or more, the greatest number being fifteen words.

QUEBEC.

The educational interest of the month has mainly centred round our highest Protestant institution of learning in this Province, McGill University. The winding up of the Session's work in the different faculties, the conferring of degrees in the same on the successful candidates, the distribution of prizes to the most deserving students in the various classes bring all such institutions prominently before the public on such occasions; but this year an additional interest was imparted to all these proceedings, and a renewed enthusiasm and general interest were awakened in the University by the presence, in unusual numbers, of the alumni of previous years, who were attracted to their *Alma Mater* to commemorate the twenty-fifth year of the tenure of office of the present worthy and learned Principal—Dr. Dawson. At the banquet given on this occasion by the learned Principal to the graduates of McGill, it must have been extremely gratifying to him to see the large Molson Hall crowded to its utmost capacity with the graduates of the University, among whom not a few of those graduates present had risen to important positions of public and professional life, as, for example, His Honor the Lieutenant Governor, Dr. Robitaille, the Hon. Mr. Lynch, Solicitor-General, the Hon. Dr. Church, late Provincial Treasurer and President of the Graduates' Society, to witness the general and hearty expressions of goodwill to their University, and to hear from all the speakers the spontaneous tributes of praise for his able and successful administration of the affairs of the University during the past quarter of a century, and the almost unprecedented results produced, in regard of which it might well be said of him *et quisium pars magna fui*.

Noteworthy features relating to the future were the announcement of the intention of Mr. Peter Redpath, one of the Governors, to erect a costly and capacious museum building on the College grounds, and of the Principal to place therein, as a gift to the University, his own large geological collections, and the further announcement that the graduates propose to commemorate the twenty-fifth year of the Principal's tenure of office by the creation of a University Fund or the erection of a University building to bear his name." The museum building, it is estimated, will cost about $40,000. "Session 1882-3 will be the fiftieth year of the existence of the McGill University, and it is proposed to celebrate this anniversary, and to prepare in connection with it a sketch of the history of the College, for circulation among its friends and graduates."

At the annual convocation of the Faculties of Medicine and of Law, of McGill University, an address of welcome was presented to His Honor Lieutenant Governor Robitaille, to which he made a very neat and appropriate reply, expressive of a warm interest in his old *alma mater*, complimenting very highly at the same time the founders of McGill, especially its learned and universally esteemed Principal, Dr. Dawson.

At the late examinations of the University of Bishop's College the following gentlemen passed their primary examinations in Materia Medica, Anatomy, Chemistry, Physiology, Practical Chemistry, and Practical Anatomy for the degree of C.M. M.D.: Heber Bishop, B.A., Marbleton, Que., prizeman; Ninian C. Smillie, Montreal, Que.; Walter de Moulpied, Nicolet, Que.; J. F. E. Tetreault, St. Pie, Que.; H. R. Wilson, Montreal, Que.; E. Labue, Chicopee Falls, U.S.

The following passed their final examination for degree of C.M. M.D. in Surgery, Midwifery, Pathology, Medicine, Medical Jurisprudence and Hygiene: H. B. Chandler, Boston, U. S., gold Medallist; I. Leslie Foley, Montreal, Que., final prizeman; L. H. U. Gill, Pierreville, Que.,; F. I. E. Tetreault, St. Pie, Que.,; Edmund Labrie, Chicopee Falls, U. S.; Philip Dubé, Quebec, Que.

At the ninth annual convocation of Bishop's College, at which were present the Chancellor, R. W. Heneker, Esq., His Lordship Bishop Bond, the Rev Canon Norman, Vice-Chancellor, Dr. David, Dean of the Faculty of Medicine, Dr. F. W. Campbell and others, the prizes were awarded to the successful competitors, and degrees conferred on those mentioned above that had passed the degree examinations.

Readings and Recitations.

EDINBURGH AFTER FLODDEN.

The Town Provost, Randolph Murray, Citizens, &c.

First Citizen.

News of battle!—news of battle!
Hark! 'tis ringing down the street;
And the archways and the pavement
Bear the clang of hurrying feet.

Second Citizen.

News of battle! Who hath brought it?
News of triumph! Who should bring
Tidings from our noble army,
Greetings from our gallant king?
All last night we watch'd the beacons
Blazing on the hills afar,
Each one bearing, as it kindled,
Message of the open'd war.
All night long the northern streamers
Shot across the trembling sky:
Fearful lights, that never beacon
Save when kings or heroes die.

Third Citizen.

News of battle! Who hath brought it?
All are thronging to the gate:
'Warder, warder, open quickly!
Man, is this a time to wait?'
Who is this with bloody banner
Hanging from his drooping hand?
Can it be our Randolph Murray,
Captain of the city band?

Second Citizen.

Randolph Murray, what thy message?
Tell us all—O, tell us true!
Where are they who went to battle
For our monarch sworn to you?
Where are they, our brothers—children?
Have they met the English foe?
Why art thou alone, unfollowed?
Is it weal, or is it woe?

Town Provost.

Now, Randolph, tell thy tidings,
However sharp they be;
* * * *
Woe is written on thy visage,
Death is looking from thy face:
Speak! though it be of overthrow,
It cannot be disgrace!

Randolph.

Take the banner—none may touch it
Save thine old and honour'd hand.
It is all I have to bring ye
From the bravest of the land!
Ay, ye may well look upon it—
It was guarded well and long
By your brothers and your children,
By the valiant and the strong.
One by one they fell around it,
As the archers laid them low,
Grimly dying, still unconquer'd,
With their faces to the foe.

Ay, ye may well look upon it—
There is more than honour there,
Else, be sure, I had not brought it
From the field of dark despair.
Never yet was royal banner
Steep'd in such a costly dye;
It hath lain upon a bosom
Where no other shroud shall lie.
Sirs, I charge you, keep it holy,
Keep it as a sacred thing,
For the stain ye see upon it
Was the life-blood of your king!

FIRST CITIZEN.

O, the blackest day for Scotland
That she ever knew before!
O our king! the good, the noble,
Shall we see him never more?
Woe to us, and woe to Scotland!
O our sons, our sons and men!
Surely some have 'scaped the Southron,
Surely some will come again!

RANDOLPH.

Till the oak that fell last winter
Shall uprear its shattered stem,
Wives and mothers of Dunedin,
Ye may look in vain for them!

PROVOST.

Thou hast spoken, Randolph Murray,
Like a soldier stout and true;
Thou hast done a deed of daring
Had been perilled but by few.
For thou hast not shamed to face us,
Nor to speak thy ghastly tale,
Standing—thou a knight and captain—
Here, alive within thy mail!
Now, as my God shall judge me,
I hold it braver done
Than hadst thou tarried in thy place,
And died above my son!
Thou needst not tell it: he is dead—
God help us all this day!
But speak—how fought the citizens
Within the furious fray?
For, by the might of Wallace!
'Twere something still to tell
That no Scottish foot went backward
When the Royal Lion fell!

RANDOLPH.

No one fail'd him! He is keeping
Royal state and semblance still;
Knight and noble lie around him,
Cold on Flodden's fatal hill.
Of the brave and gallant-hearted,
Whom ye sent with prayers away,
Not a single man departed
From his monarch yesterday.
Had you seen them, O my masters,
When the night began to fall,
And the English spearmen gather'd
Round a grim and ghastly wall!
As the wolves in winter circle
Round the leaguer on the heath,
So the greedy foe glared upward,
Panting still for blood and death.
But a rampart rose before them,
Which the boldest dared not scale;
Every stone a Scottish body,
Every step a corpse in mail.
And behind it lay our monarch,
Clenching still his shiver'd sword;
By his side Montrose and Athole,
At his feet a Southron lord.
All so thick they lay together,
When the stars lit up the sky,
That I knew not who were stricken,
Or who yet remain'd to die.
Then I stoop'd, and took the banner,
As you see it, from his breast,
And I closed our hero's eyelids,
And I left him to his rest.

PROVOST.

Rouse ye, sirs; for now we may not
Longer mourn for what is done;
If our king be taken from us,
We are left to guard his son.
We have sworn to keep the city
From the foe, whate'er they be;
And the oath that we have taken
Never shall be broke by me.
Up, and rouse ye! Time is fleeting,
And we yet have much to do;
Up, and haste ye through the city,
Stir the burghers stout and true!
Gather all the scatter'd people,
Fling the banner out once more,—
Randolph Murray, do thou bear it,
As it erst was borne before;
Never Scottish heart will leave it,
When they see their monarch's gore.
No, if we are doomed to perish,
Man and maiden, let us fall,
And a common gulf of ruin
Open wide to whelm us all!
Never shall the ruthless spoiler
Lay his hot, insulting hand
On the sisters of our heroes,
Whilst we bear a torch or brand.
Up, and rouse ye, then, my brothers;
But when next ye hear the bell
Sounding forth the sullen summons
That may be our funeral knell,
Once more let us meet together,
Once more see each other's face,
Then, like men that need not tremble,
Go to our appointed place.
God, our Father, will not fail us
In that last tremendous hour;
If all other bulwarks crumble,
He will be our strength and tower:
Though the ramparts rock beneath us,
And the walls go crashing down;
Though the roar of conflagration
Bellow o'er the sinking town,—
There is yet one place of shelter
Where the foemen cannot come,
Where the summons never sounded
Of the trumpet or the drum.
There again we'll meet our children,
Who, on Flodden's trampled sod,
For their king and for their country
Render'd up their souls to God.
There shall we find rest and refuge,
With our dear departed brave;
And the ashes of the city
Be our universal grave!

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

EAST VICTORIA.—Programme, Friday, May 21st, 10 a.m., President's Address; 11 a.m., Statics, Mr. W. E Tilley; 2 p.m., Decimals, with class, Mr. S. Armour; 3 p.m., English Literature, Mr. C. J. Logan; 4 p.m., Fractions, with class, Mr. H. Hart; 7.30 p.m., Composition, Mr. J. Shaw; 8.30 p.m., Recent Changes in School Law, Mr. Knight. Saturday, 9 a.m., Question Drawer, Committee; 10 a.m., Election of Officers; 11 a.m., Prosody, Mr. J. Shaw. The meeting on Friday evening will be held in the Town Hall. G. H. Howson, Esq., Reeve of Bobcaygeon, has kindly consented to take the chair. G. I. IRWIN, President; J. H. MCFAUL, Secretary.

FRONTENAC.—Thursday, May 13th, 11 a.m., Business Meeting; 1.30 p.m., How to Teach the First Book, Mr. McIntyre; 2.15 p.m., A Sketch of Mr. Alcott's School, Boston, Mr Bamford; 3 p.m. School Hygiene, T. Dupuis, Esq., M.D.; 4 p.m., Common Improprieties of Speech, Mr. Summerby. Thursday Evening, Public Address. Friday, May 14th, 9 a.m., Cultivation of the Memory, J. H. Metcalfe, M.P.P.; 9.40, Practical Arithmetic, Mr. D. Robb; 10.20, A few of the Trials of a Teacher, Mr Bole; 11.00, Question Drawer; 1.30 p.m., Grammatical Analysis, Mr. Henstridge; 2.15 p.m., Election of Officers for the ensuing year. N. F. DUPUIS, M.A., President; J. W. HENSTRIDGE, Secretary.

GRENVILLE.—The next regular meeting will be held in the High School, Kemptville, on Friday and Saturday, May 21st and 22nd, 1880. Friday, 9 to 12 a.m., and 2 to 5 p.m., Opening Address, by the President; Reading of Minutes and Report of Committee on Library; Discussion on School Journal; Arithmetic, Messrs. A. McDonald, T. Meech, and D. Halfpenny; Geography, Miss Amelia Gibson and Miss Jennie Thompson; Authorized Text-Books, Rev. Geo. Blair, M.A.; Algebra, Miss Kirkup and Mr. Conerty; Grammar, Mr. McPherson, M.A., and Mr. O. McCullough. Evening Lecture by John Burchell, Esq., P.L.S., Subject—Hints and Encouragements to Teachers. Saturday, 9 to 12 a.m., and 1 to 2.30 p.m., Methods of Teaching, the President; Reading, Mr. Conerty; Object of School Life, Mr. McCullough; Geometry, Jas. Carman, M.A.; Involution

and Evolution, Rev. Geo. Blair, M.A.; Spelling, Messrs. A. Wilson and R. W. Perkins; Principles of Land Surveying, Mr. Burchell. Friday will be allowed as a visiting day to those who attend the Association.

R. W. HICKS, President. GEO. BLAIR, M.A., I.P.S., Secy.

KINGSTON.—Friday, 7th May, 9 a.m., Education in Canada, J. H. Metcalfe, M.P.P.; 10 a.m., Arithmetic, Mr. T. H. McGuire; 11 a.m., Grammar to Beginners, Mr. J. S. Wood; 2 p.m., Weekly Reports, Mr. W. H. Godwin; 3 p.m., Special Methods, Mr. W. G. Kidd; 4 p.m., English Composition, Mr. D. McFarlane; 7.30 p.m., Public Lecture, S. Woods, M.A. Saturday, 8th May, Business Meeting; 10 a.m., Object Lessons, Mr. W. J. Summerby; 11 a.m., A Paper, A. B. Nicholson, B.A.; 2 p.m., Drawing, Mr. A. W. Moore; 3 p.m., Question Drawer, Committee. M. LIVINGSTONE, Secretary. A P. KNIGHT, M.A., President.

LANARK.—Almonte, Friday, May 21st, 9 a.m., My Method of Teaching Writing, A. Devitt; 10 a.m., The Want of Connection in Studies an Evil in Schools, Geo. Berlinquette; 11 a.m., The Prize System, Wm. A. Hanna; 1.30 p.m., Study of History in Public Schools, John McArter; 2.30 p.m., Grammar, and How to Teach it, John Raine; 3.30 p.m., Assignment of Lessons, Ed. Anderson; 4.30 p.m General Business. Saturday, 9 a.m., Reading, J. A. MacCabe, M.A.; 10 a.m., English Grammar for Senior Classes, P. C. McGregor, B.A.; 11 a.m., Examinations, J. P. Anderson; 1.30 p.m., English Literature, J. L. Michell, B.A.; 2 30 p.m., Geography, W P. Robertson. Friday, 8 p m., Public Lecture—The Cultivation of Taste, particularly among Children—J. A. MacCabe, M.A., Principal Normal School, Ottawa.

H. BEER, Secretary *pro tem.* H. L. SLACK, M.A., President.

PRINCE EDWARD, Friday & Saturday, May 14 & 15.—1. Home Lessons, Convention; 2. Examinations, G. D. Platt; 3. Islands of the Pacific, S. B. Nethery; 4. Euclid, Deductions, W. Clark; 5. Moods in Grammar, J. A. Clark; 6. Grammatical Analysis, D. Young; 7. Reading and Elocution, R. Lewis, Esq., Author of "How to Read"; 8. Illustrative Readings. Roll of Teachers will be called, and all are expected to attend both days. Friends of Education are invited.

G. D. PLATT, President.

TEACHERS' ASSOCIATION.—The next meeting of the Durham Teachers' Association will be held in the High School Buildings, Port Hope, on Friday and Saturday next, May 7th and 8th. The programme is as follows: FRIDAY—10:30 a.m. Election of Officers; President's Address; general business; Geometry by Mr. R. Grandy. Composition by Inspector Tilly; Arithmetic by Mr. A. J. Reynolds. SATURDAY—Algebra by J. C. Hartstone, B.A.; Question Drawer by Messrs. Goggin and Barber; Superannuation by Mr. J. Crawford; Grammar by Mr. A. Purslow, M.A., LL.B.; Written Examinations by Mr. W. W. Tamblyn, M.A. Every teacher in the country is expected to attend.

NORTH YORK.—The next half-yearly meeting of the North York Teachers' Association will be held in the Newmarket School Room, on Friday and Saturday, the 21st and 22nd of May next, commencing at 10 o'clock a.m. Programme:—1. Miss McMurchie, Newmarket Object Lesson. 2. Mr. J. Brackin, Richmond Hill, Elementary Drawing. 3. Mr. H. Irwin, Newmarket High School, "The Duties of the Teacher outside the Class." 4. Mr. McMurchie, Schomberg, "Method of Analysis, and Mode of Teaching it." 5. Mr. Rose, Newmarket, "Difficulties of Management, and how to overcome them." 6. Mr. W. F. Moore, Nobleton, Essay on "Order, Cleanliness, &c., in connection with the School." 7. Mr. W. Rannie, Newmarket, "Shall the Provincial Association be made Representative?" 8. Election of Delegates to Provincial Association. 9. Election of Officers. Mr. Scott, of Toronto Model School, may be expected to take up two or more of the following subjects:—"How to deal with Indolent Pupils," "First steps in Composition," "Drawing, To whom it should be taught, Who should teach it, What to teach, and How," "Memory, How to train it."

D. FOTHERINGHAM, *Pres.* W. RANNIE, *Sec.*

NORTH HASTINGS.—PROGRAMME—Thursday, May 13th. 10 a. m. to 11.—General business; 11 to 12.—"Written Examinations, the purposes for which they may be used, and how to conduct them," by Mr. Sutherland; 1.30 p. m. to 3.—"Hints to Young Teachers," by Inspector Burrows, Napanee; 3 to 3.30.—"Geography to Third Classes," by Miss McDermid; 3.30 to 4.30.—"Geography to Fourth and Fifth Classes," by Mr. Kirk; 4.30 to 5.30.—"Literature in Public Schools," by Mr. Mulloy; 8 to 9.—"History in Public Schools, what it should be, and how to teach it," by Professor Wright, Albert University; 9 to 10.—"Health in Public Schools," by Dr. Dafoe. Friday, May 14th. 9 a.m. to 10.—Election of Officers, and reports of Committes; 10 to 10.30.—"School Management," by Miss Riddell; 10.30 to 11.30.—"Method of Teaching Arithmetic to Third and Fourth Classes," by Mr. Mackintosh; 1.30 p. m. to 2.30.—"Teachers' Associations," by Mr. D. Johnston, Cobourg; 2.30 to 3.—"Grammar to Juniors," by Miss Hornibrook; 3 to 4.30.—"Mistakes in teaching Grammar to Seniors," by Inspector Johnston. N.B.—On the evening of the 13th the Convention will meet in the Town Hall.

GEO. KIRK, Secretary. W. MCINTOSH, President.

ELGIN.—The above Association will hold the next Regular Half Yearly Meeting in the Collegiate Institute Buildings, St. Thomas, on Thursday and Friday, 13th and 14th May, 1880. PROGRAMME—Thursday, 10 a. m. to 11.—Business Meeting, Nomination and Election of Officers; 11 to 11.30.—"Grammar to Junior Pupils," by R. C. Inglesby; 11.30 to 12.—"Essay," by Miss Metcalf; 1.30 to 2.15 p.m.—"Calisthenics," by Miss S. Watts; 2.15 to 3.15.—"Chemistry," by T. Kirkland, M. A.; 3.15 to 4.—"History," by A. J. Bell, B.A.; 7.30—Lecture by Thomas Kirkland, M.A., Science Master, Toronto Normal School, in the Centre Street Baptist Church. Subject: "The story of the Earth," illustrated by Stereopticon Views. Friday, 9 to 10—"Energy, What is it?" by A. F. Butler, I.P.S.; 10 to 11—"Natural Philosophy," by T. Kirkland, M.A.; 11 to 12—"Arithmetic," by J. W. Cook; 1.30 to 2.15 p.m.—"Map Drawing," by D. McLean; 2.15 to 3—"Geography," by S. C. Woodworth; 3 to 4—Question Drawer.

N. M. CAMPBELL, President. THOS. LEITCH, Cor. Secretary.

NO. 2 LEEDS.—The next meeting will be held at Farmersville, May 20th and 21st. Thursday, 9 a.m.—President's Address; Business Meeting; Roll Call of Members; Examinations, and how to prepare for them; 1.30 p.m.—Arithmetic, Grammar, Library, Language Lessons; 7.30 p.m.—Public Lecture. Friday, 9 a. m.—School Report, Alphabet, Algebraic Formulas, Essays; 1.30 p. m.—Recent changes in School Law, Drawing, Composition.

A. BOWERMAN, M.A., President. J. S. ROWAT, Secretary.

REVIEWS.

FORTY THIRD ANNUAL REPORT *of the Board of Education, Massachusetts*, 1878-79. Mr. Dickinson, Secretary of the State Board, is to be congratulated upon issuing what, to the thoughtful educationist, is the most suggestive work of the year. There is more practical instruction in it than in half a dozen ordinary works on methods of Teaching. We propose to quote largely from it from time to time for the benefit of our readers.

BOSTON MONDAY LECTURES, LABOR; *by Joseph Cook. Published by Houghton, Osgood & Co.* This volume contains ten lectures and ten preludes. The lectures relate to labor in its various relations to society, the preludes deal with the most momentous topics of the time. The man who wishes the advanced thoughts of the most profound thinkers of modern times on social and religious problems cannot afford to remain a stranger to the works of Mr. Cook. His prelude on the Future of Canada will be of special interest to Canadians.

PRESCOTT'S PLAIN DIALOGUES. *New York: C. T. DeWitt, 33 Rose Street.* This contains thirty-four dialogues of a better class than is sometimes to be found in American works of the kind. They are nearly all new, and teachers will find them free from many of the objectionable vulgarities and slang expressions which disgrace too many pages

ONE HUNDRED CHOICE SELECTIONS, No. 17. *Philadelphia: P. Garrett & Co., 700 Chestnut Street.* The teacher who wishes to obtain in a single collection an encyclopædia of good recitations should obtain the complete set (17) of the Hundred Selection Series. Number seventeen is a fair specimen, and contains absolutely nothing that is merely "filling in." The selections might be taken in order and every dozen of them would form a most excellent programme.

CHEERFUL WORDS.—*By George McDonald.* Boston, *D. Lothrop & Co.* Mr. McDonald has written some of the most delightful, as well as the most powerful novels of this century. No one of them is barren of characters who, by word and act, spread around them the sweet influences of truth, purity and religion. There is a charm in the plain way in which the great problems of religion are expounded by these characters in their daily lives, and in their simple and eloquent reasonings. This book consists of brief quotations from the conversations given in Mr. McDonald's books on a variety of interesting subjects. It is a most attractive volume.

AN ELEMENTARY GUIDE TO DETERMINATIVE MINERALOGY.—*Chicago, S. J. Wheeler.* This is written by Professor Wheeler, of Chicago University. It is based upon the method of "Weisbach's Tebellen Zur Bestimmung Dar Miner Alien." It is a capital arrangement of mineralogical tables for a prospector or amateur mineralogist to carry in his pocket.

A TRAMP ABROAD.—*By Mark Twain.* Everything this remarkable man writes is readable. His style is too well known to need description, but even his admirers will find new beauties to admire in this, his last and best book. It is a spirited account of the things that Mark Twain would be likely to see and appreciate in a lengthened tour, mainly on foot, through Germany and other parts of Europe. He is amusing, of course; a rare, racy, but delicate humor runs like a rippling stream throughout the whole of the book, but beside this brook the author has erected landmarks of information, which will remain in the memories of his readers. The book is literally filled with illustrations. They are all well executed, and some of them are from sketches by the author himself. They are a study. The artist has developed in him since he made his map of Paris. Any one who wishes genuine humor without any trace of vulgarity may safely purchase this book. It is sold only by subscription. Mr. W. S. Davis is the agent for Canada.

THE COMMON SCHOOL QUESTION BOOK.—*By Asa H. Craig.* This is a work of 340 pages, containing questions for review, with answers in a different part of the book on all the subjects of a common school programme. The questions strike at the root of the matter, and are very suggestive. For private study for examinations, the book would prove of great service, inasmuch as it gives questions on the important parts of each subject. The student who reads without a guide is liable to be confused, and finds great difficulty often in deciding upon which points to bestow his best efforts. A book like Mr. Craig's supplies to a certain extent the loss of a master to assign lessons and conduct reviews. The student by its aid can be his own coach. It contains 385 questions on the History of Canada alone, and

the answers are concise and accurate statements of the leading events in the settlement and growth of the Dominion. The answers are remarkable for their fairness in those parts relating to the history of troubles between Canada and the United States. As an instance of this it may be mentioned that it does not question the fact that the Americans were practically defeated at Lundy's Lane. We commend the book to teachers and students alike.

MAGAZINES.

BLACKWOOD'S MAGAZINE for April has been received from the Leonard Scott Publishing Co., 41 Barclay St. N. Y. It contains: Brummagem Morality; Part xiii. of the interesting story "Reata"; the Peasant Proprietors of Norway; Part v. of "Bush-life in Queensland"; the Afghan War, Part ii.; "Eleanor," a tale of non-performers; the Prince Consort; the Crisis Abroad; the Appeal to the Country.

THE NORTH AMERICAN REVIEW for May, D. Appleton & Co., N. Y., contains: General Grant and Strong Government. The Religion of all Sensible Men. McClellan's Last Service to the Republic. Ralph Waldo Emerson. The Monroe Doctrine and the Isthmian Canal. Recent History and Biography. (1) History of the Norman Conquest. (2) The Life of Gladstone (3) Lamartine and his Friends.

THE CONTEMPORARY REVIEW for April, 1880, Strachan & Co., 34 Paternoster Row, London, contains: The Armenian Question; Prof. Max Muller and Mr. Mill on Liberty; The genealogies between Adam and the Deluge; Personal Property; Debt and Interest; The Relations of Living Beings to One Another; The Society of the Future; A Spring Carol; Metternich; The History of Rent in England; The Outlook in Europe.

LITTELL'S LIVING AGE.—The numbers of *The Living Age* for the weeks ending April 3rd and 10th respectively, contain the following articles: The Proper Use of the City Churches, *Nineteenth Century;* The Pillar of Praise, *Contemporary*; The Beginnings of Greek Sculpture, *Fortnightly*; The Reign of Queen Anne, Bush-life in Queensland, and the North East Passage, a Narrative of the Voyage of the Vega, *Blackwood*; The Origin of a Written Greek Literature and Wordsworth, *Fraser*; An Indo-Anglian Poet, *Gentleman's Magazine*; and in the way of Fiction, the "Crookit Meg," a story of the year One; "Visions" from the Russian of Tourgeneff; and "Verena Fontaine's Rebellion;" and the usual amount of poetry.

As a New Volume begins with the number for April 3rd, this is a good time to subscribe.

For fifty-two numbers of sixty-four large pages each (or more than 3,300 pages a year), the subscription price ($8) is low; while for $10.50 the publishers offer to send any one of the American $4 monthlies or weeklies with *The Living Age* for a year, including the extra numbers of the latter, both postpaid. Littell & Co., Boston, are the Publishers.

THE GENTLEMAN'S MAGAZINE for April is a strong number. Besides a very interesting instalment of "Queen Cophetua," it contains: "Notes on Infinity," by Richard A. Proctor; an article on "Mrs Grover," the actress, by Dutton Cook; one on "The Last English Parliament," by "the Member for the Chiltern Hundreds"; an account of "Joubert," by Margaret M. Maitland; a paper on "Dress in Relation to Health," by B. W. Richardson, M. D.; one on "The Dog and its Folk-Lore," by T. F Thiselton Dyer; a description of "Madeira," by an anonymous writer; and Table Talk by the Editor.

THE ATLANTIC MONTHLY for May contains two articles of special interest to Teachers: "The Examination System in Education," by Willard Brown; and "British Americanisms" by Richard Grant White. The former is an attack upon the examination system of the English and American Universities: in the latter, Mr. White shows, in his usual pleasing style, that many words which are set down as Americanisms, are more English than American. The number also contains additional chapters of "Still-Water Tragedy," the "Records of W. H Hunt," and the "Undiscovered Country;" poetical contributions by C. P. Cranch, George Parsons Lothrop, and an anonymous writer; and reviews of "Recent Novels;" "Mark Twain's New Book;" the "Life of Farragut;" the Memoirs of Prince Metternich;" "Zola's Last Novel;" "Hector Berluz;" the "Souvenirs of Madame Virgee Le Brun;" and "Symond's Greek Poets." The remaining contents are a good short story, entitled "McIntyre's False Face," by W. B. Bishop; "Ten Days in the Rebel Army," by S. H. M. Buyers; a "Neglected Poet;" by G. E. Woodberry, who writes under the heading a "Pleasant Article on Crabbe;" a valuable article on "The Democratic Presidental Nomination;" and "The Contributors' Club." In short, the number is very varied and interesting.

THE POPULAR SCIENCE MONTHLY. New York: D. Appleton & Co. The May number begins Vol. 17. It contains three articles of intense interest to Canadian teachers: "Climate and Complexion," by J. M. Buchan, M.A.; 'Sham Admiration in Literature," and "The Impediment of Adipose." The first is valuable as showing the state of knowledge upon this subject, and presenting original views of the writer; the second exposes the hollowness of the too common admiration of literary works by those who never read them, but have merely read reviews of them, or worse, are merely enthusiastic in their love for Mliton because it is fashionable to be so. The author recommends careful study of good English authors instead of Latin and Greek in schools. "The Impediment of Adipose" is a discussion of the cause of the mental and moral peculiarities of Hamlet. They are attributed solely to the fact that he was over stout, "fat and scant of breath." The physical explanation seems to have considerable *weight*. The other articles are "The Carbon Button;" "God and Nature;" "The Buffalo and his Fate;" "The Martydom of Science;" "The pleasure of visual form; "Hysteria and Demonism—A study in Morbid Psychology:" "Bacteria as destroyers of insects;" "Some facts and fictions of Zoology;" "The Electrical Polyscope" (illustrated); "Capture among the Mollusks," (illustrated); "How insects direct their fight;" 'Sketch of James Clerk Maxwell," (with portrait); "Correspondence;" "Editor's Table;" "Literary Notices;" "Popular Miscellany;" "Notes."

HARPER'S MAGAZINE for May presents an unusual variety of entertaining matter, and is full of beautiful illustrations. The novelty of the number is striking. The opening article, by Henry Van Dyke, Jr., takes us to the Red River Valley and across the border into Manitoba. The resources and the picturesque features of the country and its peculiar people (including the Mennonite immigrants) furnish entirely fresh pictures for pen and pencil; and, in the use of the latter, Mr. W. S. Macy, the artist, has been very efficient. Equally novel are the pictures of old Dutch life which Mr. Henry Brace—assisted by the pencils of Pyle and Stone—presents in his exceedingly interesting article, entitled "Old Catskill." Mrs. Lillie's second paper on "Music and Musicians in England" is, in every page of it, a revelation of phases of English social life unfamiliar to the majority of American readers. The social side of English musical life has furnished Mr. Abbey with motives for a number of delightful drawings, engraved for this article. In addition to these, this artist has also contributed to this number a charming illustraltion of Robt. Herrick's poem "On Chloris Walking in Ye Snow." The remaining articles and departments are: "Phe Shad and the Alewife," by James W. Milner, with thirteen illustrations; "Home Studies in Nature, II. by Mary Treat, with two illustrations; "Wnen," a Poem, by A. T. L.; "The Metropolitan Museum of Art, With Fourteen Illustrat(ons; "Salgama Condita," A story. by Lizzie W. Champney; "White Wings," a Yachting Romance, by William Black: 'Civil Service Reform in New York," by Edward Cary; "Our Beginnings," A Story, by Angeline Teal; "Lost." A Poem, by Alfred H. Louis; "Our National Guard," by Colonel H. M. Boies; "Mary Anerley." A Novel, by R. D. Blackmore; "To a Bluebird. A Poem, by George P. Guerrier. Editor's Easy Chair-M. Lesseps in New York; Editorial Decisions; The Art of To-Day; The Musical Explosion in Cincinnati; Wood-Engraving; State Pride in New York. Editor's Literary Record. Editor's Historical Record. Editor's Drawer.

Official Department.

PROFESSIONAL EXAMINATIONS.

CANDIDATES FOR FIRST CLASS CERTIFICATES.

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2. Candidates for First class certificates who are not Normal School students shall undergo their professional as well as their non-professional examination at the Toronto Normal School at the same time and on the same papers with those candidates for First-class certificates who are Normal School students.

3. The professional examination will be conducted so as to elicit the extent of the professional training of each candidate, as carried on concurrently with his instruction in the "non-professional subjects" prescribed by the Regulations. The Professional Examination for all grades of First-class certificates will be the same. The *Subjects* are:

EDUCATION, viz.:—1. *Educational Methods.* (The candidate may consult the following works:—Teacher's Manual of Method and Organization, by Robert Robinson, Inspector of National Schools, Ireland;—Methods of Instruction, by J. P. Wickersham, A.M., Principal of the Pennsylvania State Normal School;—Currie's Common School Education;—Jewell on School Government) 2. *History of Education.* (The following works may be consulted:—Essays on Educational Reformers, by Robert Henry Quick, M. A.;—Practical Educationists and their systems of teaching, by James Leitch, Principal of the Church of Scotland Normal School, Glasgow.) 3. *Psychological Foundations of Education.* (The candidate may consult "Education as a Science," by Alexander Bain, LL.D.)

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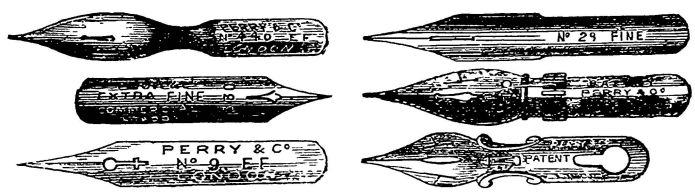

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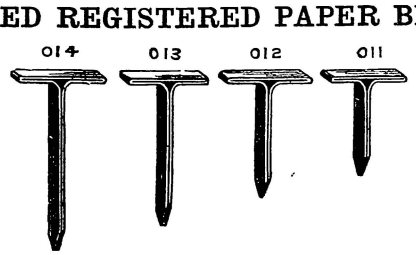

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The Canada School Journal.

VOL. V. TORONTO, JUNE, 1880. No. 37.

JAMES DEMILLE, A.M.

It affords us pleasure to present to the readers of the JOURNAL a portrait of the late Professor DeMille. We regret our inability to furnish such a biographical notice as would do justice to his noble qualities as a man, to his scholarship, and to his meritorious contributions to literature. Dying at the early age of forty-three, he, nevertheless, in his chosen sphere of labor, has left a name second to that of no contemporary Canadian.

Mr. DeMille was a native of St. John, New Brunswick, in which city he received his early education. His college training was secured partly, we believe, at Acadia College, Wolfville, N.S., and partly at Brown University, Providence, R. I. At the latter institution his mental powers were brought under the plastic influence of that rare educator, Dr. Francis Wayland. The writer of this sketch first met Mr. De Mille a few months after his graduation, somewhere about the year 1859, when fate shut them up together for a day or two in the narrow confines of a Bay of Fundy packet. Even then his conversational ability, the extent of his reading and his literary enthusiasm were quite remarkable, and made an impression on his youthful companion not yet obliterated.

After graduation, Mr. De Mille visited Europe, spending much time in researches in the ancient cities of Italy. "Helena's Household," one of his first and most popular works, bears testimony to the profound impression made on his youthful mind by the memorials of early Christian faith and practice. On his return, after a brief career in business, he was chosen Professor of Classics in Acadia College, which position he filled for some four years to the entire satisfaction of the friends and supporters of that institution. Throughout his whole course as an instructor, he bound his pupils to himself with hooks of steel, so that though he has left behind him enduring literary monuments, the preservation of his memory is not self-dependent on them. By none is it more warmly cherished than by those who enjoyed his lectures when he was in the fresh enthusiasm of his youth.

In 1864, the Governors of Dalhousie College invited Professor DeMille to accept the Professorship of History and Rhetoric in connection with their University. In this post he labored faithfully and successfully until his sudden and lamented death. For the duties of his dual professorship he possessed rare and equal qualifications. His lectures on historical subjects evinced patient research and deep philosophic thinking, while the style both of the composition and delivery was such as to make them peculiarly attractive. The recently published, but already well-known treatise on "Rhetoric," which bears his name, embodies, we suppose, the chief points of his discussion of the principles of that Art. It is a thoroughly good and valuable book, and is even now a standard text in some prominent institutions in the United States. An elaborate consideration of his various contributions to popular literature is not required in the pages of an educational journal. Mr. De Mille was a tireless worker and wielded a singularly facile pen. His career as an author began with, we believe, anonymous contributions, which at once attracted attention in *Harper's Magazine* and other high-class periodicals. To that journal he afterwards contributed the "Dodge Club" series, which has done much to give him popularity. With all the merits, and these are great, of Mr. DeMille's well-known novels, it is the impression of those who were in the best position for gauging his mental powers that he was capable, when the ripe opportunity should come, of literary achievements surpassing any actually accomplished. The versatility of his attainments and capabilities has perhaps not been adequately recognized. The author of the text-book on "Rhetoric" and of the famous "B. O. W. C." series, the very cream of modern literature for boys, must have been a many-sided man.

The tidings of Prof. DeMille's altogether unexpected death came to the citizens of Halifax like a shock of sad surprise. Though he was unobtrusive in manner and shy of public appearances, his death revealed the hold which genuine merit invariably has on popular esteem. Dalhousie College will find it difficult to fill Prof. DeMille's place with a man combining so many elements of power. Canada mourns the loss of one of her most gifted sons.

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The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

TORONTO, JUNE, 1880.

—We propose to issue the July number of the JOURNAL earlier than usual, that our readers may be able to have a correct guide to the great educational gatherings during the holidays.

—The Common Council of the city of London (Eng.) is about to establish a School of Music, to give thorough musical instruction at a moderate cost. In this connection it may be mentioned that there are in Great Britain and Ireland about 11,000 persons who obtain a livelihood by teaching music. Of these about 4,000 are in the metropolis.

—Mr. Richard Lewis, Professor of Elocution, will conduct a summer school of elocution in Toronto for the benefit of those teachers who wish to make themselves more proficient in that study. In addition to his long experience and great success in teaching elocution in Public Schools, Mr. Lewis has charge of this department in Knox College and the Divinity School of the English Church.

—We have received the annual report of Mr. C. C. McKenzie, Chief Superintendent of Education for British Columbia. Educational matters in that province are on the whole progressing favorably. A new School Act has been passed giving trustees more power, and establishing more intimate relations between the teachers and the Chief Superintendent. The Council of Education has ceased to exist. There are in all 58 teachers and 2,301 registered pupils. The highest salary paid is $110 per month, and the lowest $45. The average salary is $61 per month.

—Mr. Gladstone having been asked to sign a memorial to the Vice-Chancellor of the University of Cambridge in favour of granting degrees to women, has sent the following reply :

"Sir,—My rule is strict against subscribing memorials to be presented to our authorities. But, having had a daughter for some years at Newnham, my sympathies run strongly in your direction, though it is with deference that I submit any formed opinion. I do, however, lean to the opinion that the absolute restriction of university and college endowments to men is, under present circumstances, impolitic and unjust. I do not hereby imply that I am adverse to other aid and recognition.

Your very faithful and obedient, W. E. GLADSTONE."

—The following memorial to the Aberdeen School Board from the Free Presbytery of Aberdeen was remitted to a special committee :

"Your memorialists, being much concerned at the extent to which profane language and rude and indecent conduct prevail amongst some of the youth of this city, and having themselves resolved upon the adoption of all means of repression within their power, and being fully convinced that the co-operation of your Board will be of the greatest service in checking these evils, and further, having learned with much pleasure that you are engaged in considering these matters, respectfully approach you with the request that you will issue such instructions to your teachers as shall aid them in a special manner to impress upon the youth under their charge the evil of such practices, and that you will further use such other means as are competent to you to advance this object."

This subject might well receive a greater amount of attention from teachers in most cities and towns. Purity of language will preserve purity of thought. The contrary is equally true.

—At the last meeting of the Durham County Teachers' Association it was decided unanimously to give the CANADA SCHOOL JOURNAL to every member of the Association for the sum of twenty-five cents per annum, the Association paying the balance. It was held that this was a better use to make of the funds than the purchase of a library, owing to the great difficulties connected with the circulation of a library throughout a county. We commend the course to other associations who have not already adopted it. It is the intention of the publishers to produce a journal, each volume of which will be an educational library in itself, and to furnish it at the very lowest rates to associations. In addition to the many Canadian and American sources of information and experience which have been laid under tribute to produce a journal of the highest excellence, representatives have been secured in England, at Cambridge, and in connection with the College of Preceptors, and the National Union of Elementary Teachers; so that the freshest educational developments of the Mother Country, from the primary school to the University, will be laid before our readers each month.

—The opponents of any great reform in England frequently attempt to defeat the movement by caricature and doggerel. In the time of John Wesley his religious work was vainly attacked in this manner. He and his friends, including the noble Huntingdon, were represented in pictures as guilty of most obscene practices under the guidance of the arch-fiend himself, whose familiar figure always graced a prominent position in the sketches. We have been favored by receiving a copy of a Churchman's attack on the School Boards of Eng-

land in miserable rhyme, and accompanied by a lithograph of a school board in session, seated on a car of Juggernaut, which is crushing under its gigantic wheels the poorer classes of free-born Englishmen. Even the shingles seem to be rising from the roofs of the houses in honest indignation at the terrible ravages of the awful Public School system. His Satanic Majesty, in all the dignity of scales, claws, hoofs, and tail, is enthusiastically giving his blessing to the ladies and gentlemen of the school board for so effectively doing his work. Notwithstanding such dodges, the Board system continues to make rapid advancement in gaining the sympathies of the English people.

—A correspondent of the London *Schoolmaster* writes as follows in relation to Penny Banks :

"The value of Penny Banks in schools is recognized by the Education Department, who now require returns of them in the printed forms for school accounts. Thus children, who have pence but not often shillings at their command, are trained early in habits of thrift. Nor is the benefit confined to the children, for it has been found that the influence of the school acts upon the parents, and brings home to them the value of these institutions. The Yorkshire Penny Bank, which has now more than 500 branches, is doing great good in this way. The actuary of one branch wrote a short time ago to the central office—'I know for a fact that drunkards will often give money to their children to put in the bank, which otherwise would be spent in the public-house. These children will in time, no doubt, exercise great influence over their parents, and probably lead to their reformation.' In France, where the School Penny Bank system has had an extraordinary development, the influence of children upon their parents has been found most remarkable. While it is impossible to establish the larger savings' bank in every parish, penny banks will furnish places of deposit accessable to all."

A company is being organized to try the experiment in Toronto. Such institutions are working successfully in some of the United States cities.

—The *Lancet* has addressed the following series of questions to managers of private schools in England. They are suggestive to teachers of hygiene, and some of them should command the attention of Trustee Boards :

"1. How many boarders have you, and what are their ages, generally? 2. Were the premises now appropriated as a school-house built for that purpose, or adapted? What is the nature of the ground on which the building stands? Describe the locality, and give particulars as to climatic conditions. 3. What cubic air-space is allowed to each sleeper in the dormitories or bedrooms? 4. What is the size of the apartment used as a schoolroom, and how many cubic feet of air-space is there for each pupil? 5. What is the ordinary diet, as to the quantity and kind of food, and how are the meals distributed? 6. What time is spent in school-work, and what hours are devoted *wholly* to *play*? State the hours of retiring to bed and of rising, and mention the arrangements for visiting the sleeping apartments at unexpected times. 7. What cases of illness occurred in the school during the years 1878-9, and what has been the general state of health in the establishment? If any epidemic disease has visited the school, please state the circumstances. 8. What are the sanitary arrangements of the establishment as regards drainage, closets, lavatories, bathing, towels, &c., &c.? 9. What provision is made for the isolation of cases of infectious or contagious disease in the event of a sudden attack? 10. What system of medical inspection is adopted? Does a medical man systematically visit the establishment, or does the 'doctor' only attend when called in to treat a case of sickness?"

—Our readers will be able to judge of the present position of the "Spelling Reform" movement in England by the following petition, which has been prepared by the Spelling Reform Association :

To the Honorable the Commons of Great Britain and Ireland in Parliament assembled. The humble petition of all the persons present at a public meeting, held in the theatre of the Society of Arts, in John Street, Adelphi, on Thursday, the 29th January, 1880, sheweth : 1. That the existing mode of spelling the words of the English language is altogether devoid of system, and entirely fails to attain the main object of written language, which is to express sounds by means of convenient and consistent symbols. 2. That this anomalous and chaotic spelling, in addition to many other serious defects, is the cause of one evil of the greatest magnitude, namely, the incalculable waste of time that results from endeavoring to enable children in schools to overcome its difficulties ; so that out of the few years which can be given to instruction by the bulk of the population an altogether disproportionate share is allotted to the mere machinery of knowledge, instead of to knowledge itself. 3. That the natural tendency of written language to adapt itself to the spoken tongue is arrested and counteracted in England by the practice of Government Inspectors and other examining officers, by whom no credit is given (but, on the contrary, censure) to any spelling but the ordinary one. Wherefore your petitioners humbly pray your Honorable House—1. To declare your opinion to be in conformity with the present shewing. 2. To adopt legislative means for holding an inquiry into the desirability and practicability of a reformed system of English spelling. 3. And above all, to pass an enactment whereby all Government Inspectors of schools and all examining officers shall be authorised and enjoined to accept and give credit to spelling based upon other systems than that now in ordinary use with a view to determining by experiment whether and to what extent the adoption of any such other system may be practicable and advisable. And your petitioners will ever pray, &c.

EDUCATION IN ENGLAND.

The return of the Gladstone Ministry to power in England will undoubtedly greatly benefit the cause of popular education. We need not fear that the heads of the Education Department will disgrace their positions by speaking of the schools under their charge as for "gutter children only." Mr. Mundella, who is, in reality, the Minister of Education, delivered an address to his constituents recently, on the occasion of his re-election, in the course of which he gave the following interesting information :

"The English people have been very slow to realize the necessity for national education, but having taken it in hand it is simply marvellous, it is prodigious, the wondrous strides education has made in this country. Now let me just for a moment or two call your attention to the most recent statistics of the Department over which I have control ; and you will carry away with you a few thoughts which will convey to you better than any longer description what has been the change during the short period of nine years. In 1870, Mr. Forster passed his Education Act. That Act did not come into operation until the very end of the year, and it was in November or December that the first School Board was elected. These are the statistics for 1879, the last year of our educational work. In 1870, the number of schools inspected by Her Majesty's Inspectors were 8,281. In 1879 they were 17,166. The scholars for whom education was provided in 1870 were 1,878,584. In 1879 there were places in our schools for 4,142,224. In 1870 the scholars on the school register—not in daily attendance, but on the registers—were 1,693,059. In 1879 there were 3,710,883. The scholars who were present on the day of inspection to be examined by Her Majesty's Inspectors in 1870 were 1,434,766. In 1879 there were 2,122,672, and the army of teachers—certificated teachers, assistant teachers, and pupil teachers—had increased from 28,038 in 1870 to 72,050 in 1878. Now, that is the outcome of the first nine years by the compulsory system of education. It is alto-

gether impossible to estimate the beneficent results of that great Act of Mr. Forster. No man or woman can compute, or can imagine what its influence will ultimately be upon the destinies of this great nation. If any one wishes to form some idea of what is doing in this country, let him go into one of our newly-filled schools in one of the crofts here. Let him go into the poorest districts of your own town, and see a new Board school filled with the poorest children of parents belonging to the very poorest of the community. Let him see these children becoming elevated, humanized, and refined, taught something of the value of cleanliness and of good order. Let him see the discipline that prevails amongst them, and then the spectator will form some sort of idea of the work that is going on amongst tens and hundreds of thousands of children in this country. Where have those extra two millions of children come from, and what is going to happen in consequence of the teaching of this extra two millions of children in the future? I say it is a problem too big for human conception. This education scheme is one of the grandest works that ever was done by legislation in this or any other country. You are not only raising the children of the country—the future generation of men and women, remember—you are not only raising them in the social and intellectual scale, but you are preparing them, by giving them open and receptive minds, by giving them the elements of Scripture teaching, for that higher spiritual knowledge which makes a man better in this life and that which is to come. The Christian teacher, the Sunday-school teacher, the minister, the clergyman, all have a new and superior material to deal with—something more pliable, more malleable to their hands. And we hope that what we are doing, although it costs national money, money from the Exchequer, and money from rates, will be the best investment ever made by a free Christian people, one that will yield the greatest interest in the world that is, and in the world that is to come. This is the outcome of Mr. Forster's Act. But the work is far from complete. We have the schools; we have the teachers; but we have not yet all the children. Of the twenty-four millions of population in England and Wales, only seventeen millions are under by-laws which enforce the obligation of a parent to send his children to school. There are seven millions still exempt. It may be God's will that I shall complete the work. In Scotland all goes well. That enlightened people will make any sacrifice in order that the children may be educated. There is no parish, there is no district, there is no island hamlet so remote that the children are not in attendance at school. Every Scotch parent is under obligation to send his child to school; and as far as the Education Department can discover. there are actually more Scotch children in attendance than are accounted for by the statistics of the population. In Ireland, I regret to say, there is no obligation to send children to school. But I cannot believe that that magnificent appointment which Mr. Gladstone, with his fine perception, has made—that with William Edward Forster at the head of the Irish Department, the quick and intelligent capacity of the Irish people will be much longer neglected. Not only, I am sure, will he do justice to their intelligence, but with his ready sympathy, with his broad liberality, with his courage, and with his backbone, all Irish questions will meet with ready solution at his hands. It is now our duty to attempt—and may we not hope that we shall succeed—by slow degrees, by careful steps, by due consideration of the difficulties of parents, for local circumstances, for the wants and interests of labor and of the family—gradually to bring England and Ireland to as high a level as Scotland has already attained? Such, at least, shall be one of my constant considerations. I have scarcely entered upon the duties of my office—scarcely overhauled the immense work which devolves upon my department, but I am telling you of my vague aspirations, my desire that I may do something for the accomplishment of the work I have referred to. That, at least, I promise you. So long as I have any control in the Education Department, my efforts shall be directed not to work the machinery of that department, either for sectarian or party purposes. Education shall be paramount, and the one great end at which I shall endeavor to arrive shall be the best instruction for the children. Need I say to you that my warmest sympathies are with that large army of workers, that 70,000 odd teachers of whom I have spoken? I have ever shown it in the past, and, as I have professed it—professed it in public, and worked for them in Parliament—so I hope in practice, to the very best of my ability, I shall do all I can to free them from any of those restrictions, and the useless routine, the system of red-tape which prevails, that the defects of our educational system may have entailed upon them. I wish to set every man free, as much as possible, from the mere machinery and red-tapeism of the system, and to leave his energies at liberty to devote his whole time, or as much of it as possible—his time and his heart and soul to the cause of education and the instruction of the children. There is one thing that we must not lose sight of. I believe it is possible, and I think it is desirable, that we should attain the best educational results, with the least possible pressure both upon the ratepayer and the taxpayer. There is no greater mistake than recklessness in expenditure, even for the best of causes. The effect is that it disgusts the public even with a noble work, where expenditure is wasteful and unnecessary. But I am not going, as far as I am concerned, to stint education. We hear a great deal of talk about the people being over-educated. Let me beseech you, people of Sheffield, not to give credence to these stories. You have done nobly hitherto. I am proud to represent a constituency which, in the Education Department, stands higher—I am not saying it to flatter you, I am saying what the public officials say to me—than any other constituency in the kingdom. Let me say a few words to show you how Sheffield ranks with respect to education, and I do this because I have witnessed, occasionally, some signs of dissatisfaction that Sheffield has spent too much, or is doing too much for its children. Listen to a few facts which have not yet been made public, and which I make public to-night for the first time, and which will enable you, I think, to go home contented and satisfied. You have had in this town for the last nine years a School Board that has done its duty, that is doing its duty, and that will make Sheffield a different borough twenty years hence to what it is to-day. I give you just the cost per head to the rates of every child in the Board schools of England and Wales. Listen! The average throughout England and Wales of the rate is 18s. 9¾d. per child. How much does it cost you per child in Sheffield? 8s. 8d. Birmingham is 17s. 10½d. per head, Bradford is 18s. 2½d., Liverpool is 17s. 1¾d., London is £1 11s. 0¾n.—and you pay 8s. 8d. per head out of the rates for every child educated in the Sheffield schools. What do you pay for salaries per head in Sheffield? What is the whole cost of the salaries, which includes your School Board teaching staff and all your expenditure for compulsory attendance officers? Now listen! In England and Wales the average of the salaries per head is £1 14s. 8¾d. In Bradford it is £1 11s. 7¼d.; in London it is £2 1s. 0¾d.; in Sheffield it is £1 7s. 3d. But let me give you the best test of all. What is the grant earned per scholar in Sheffield and in other towns? because that is the test of the efficiency of the child. That is the test of what standard the children are passsing through—what is the state of attendance, what capacity they have, and what sort of teaching power you have. Let me give it to you. The average earnings per scholar in England and Wales are 15s. 3½d. In Birmingham every child earns 14s. 8½d.; in Bradford, 14s. 8d.; in Hull, 16s. 3d.; in Leeds, 15s. 2½d.; in Liverpool, 16s. 3d.; in London, 15s. 11d.; in Manchester, 16s. 2d.; and the highest of all in Sheffield, 17s. 1d. I hope it is not inappropriate that the member for Sheffield should preside over the Education Department.

Contributions and Correspondence.

UNIVERSITY OF MANITOBA.

BY REV. PROF. BRYCE, M.A., LL.B., PRINCIPAL OF MANITOBA COLLEGE.

His Excellency the Earl of Dufferin, when visiting Manitoba and the North-west, in 1877, showed the warm interest of a patriot, and the keen insight of the social economist, when he singled out the then newly established University of Manitoba for remark and hearty commendation. It was then, or is yet, far from being a full grown member of the learned sisterhood, but the noble Earl recognized in its infantile movements the promise and the potency of future greatness. At a dejeuner given him in Winnipeg, His Lordship said: "In no part of Canada have I found a better feeling in "all classes and sections of the community. (Cheers.) * * * "At the present moment it (the wide-spread sentiment of brother-"hood) is finding its crowning and most triumphant expression "in the establishment of a University, under conditions which have "been found impossible of application in any other Province in "Canada—I may say in any other country in the world—for nowhere "else, either in Europe or on this continent, as far as I am aware,

"have the Bishops and heads of the various religious communities "into which the Christian world is so unhappily divided, combined "to erect an Alma Mater to which all the denominational colleges "of the Province are to be affiliated, and whose statutes and degrees "are to be regulated and dispensed under the joint auspices of a "governing body in which all the churches of the land will be "represented. An achievement of this kind speaks volumes in "favor of the wisdom, liberality, and Christian charity of these "devoted men."

Thus far in its history the University of Manitoba has been distinguished for all the gentle graces attributed to it by His Excellency. The object of the present paper is to state, shortly, its origin, and the main features of its constitution.

St. Boniface College.—Shortly after the arrival of the Selkirk colonists, or about the time of the absorption, in 1821, of the North-West Company—whose employees were largely French—the beginning of one—the oldest of the bodies which have now grown into a University—was made, viz., St Boniface College. The Rev. J. N. Provencher, who was afterwards the first Roman Catholic Bishop of the North-West, began a school—and as early as 1824 a statement is made, in a letter of the time, that several youths (enfants) were advanced in "Humanities." This school has kept pace with the advancement of the country, has been the principal foundation of the French education in the North-West, and has lately began to turn more attention to English. In 1871, shortly after the establishment of parliamentary government in the North-West, the College was incorporated as the "College of St. Boniface," bearing the name of the Roman Catholic Archdiocese of the North-West—the name St. Boniface having been given in honor of their native country by some of the German soldiers of the Earl of Selkirk, who settled on the East bank of Red River.

St. John's College.—About the time of the consolidation of the rival fur companies, likewise, the Church of England Chaplain of the Hudson Bay Company began a school, on a beautiful site, a mile or two north of Fort Garry, overlooking Red River. This school came under the direction, a few years later, of Rev. J. Macallum, M. A., and was conducted under the name of St. John's College till his death. In 1866 the College was revived by the present Bishop of Rupert's Land, and has been enlarged and improved. In 1871 the College was incorporated. The College has been useful in educating a large number of the present officials of the Hudson Bay Company, and the old English-speaking people of Red River.

Manitba College.—The heart of the Selkirk colony was the Highland settlement of Kildonan, lying three or four miles north of Fort Garry, on Red River. For well-nigh a score of years, perhaps the best ordinary school of old Assiniboia was in Kildonan. The Rev. John Black, the first Presbyterian Missionary of the North-West, paid much attention to the education of his people. In 1871 application was made to the General Assembly of the Canada Presbyterian Church to have the means of obtaining a higher education afforded. The result of this application was the establishment, at Kildonan, in 1871, of this College. The College of Manitoba was incorporated in 1873, and in 1874, on account of the growing importance of the town of Winnipeg, was moved within its limits. Its history is entirely coincident with the new state of things since the transfer of the North-West to Canada.

The University.—These three Colleges, partaking of the feeling—the prominent one of the North-West—of laying foundations for the future, and, no doubt, considering whether the time was approaching for grappling with the question of granting degrees to those completing their course of study—came to the harmonious agreement that it would be far better to have only one source of degrees for the Province, and that all the Colleges in existence, and such others as might afterwards rise, should be affiliated to a University having ample powers. Naturally, some forbearance was required on the part of all, and careful dealing on the part of the Government, but on the 8th of February, 1877, an Act, on the whole satisfactory to all concerned, was assented to by the Lieut.-Governor, establishing a Provincial University—the University of Manitoba.

Representation.—Each of the affiliated Colleges elects *seven* representatives. Convocation, a body formed by the registration of all graduates of Colleges in the Province, at the time of the passing of the Act, (these numbered between thirty and forty,) elects *three;* and the Board of Public School education elects *two*. These, with a Vice-Chancellor, elected by themselves, and a Chancellor, appointed by the Provincial Government, make up the Council of twenty-seven members, while the Lieutenant-Governor is visitor.

Powers.—Much power is placed in the hands of the Council, but there are the following limitations :—

(*a*) Each candidate may claim the benefit of the authors in Mental and Moral Philosophy, and History, which he has studied.

(*b*) The candidate has the right of answering either in English or French, as he may elect.

(*c*) Each College has the entire management of its internal affairs, studies, worship, and religious teaching.

(*d*) New Colleges may be affiliated, other than the three mentioned by the Lieut.-Governor in Council, on his being satisfied of such Colleges being in operation, and possessed of the requisite buildings, and a sufficient staff of professors and teaching officers to entitle such Colleges, in his judgment, thereto.

Degrees.—The degrees of Bachelor, Master, and Licentiate in Arts, Law, Medicine, and Science, may be granted candidates who have successfully passed such examinations as are required by the Council. Provision is also made for the granting of degrees in Honors, and for the giving of certificates of Honor.

Theological Degrees.—The giving of Theological degrees is a difficulty hitherto unsolved in Provincial or purely National Universities. It is believed the difficulty has been met in Manitoba in the following manner. Affiliated Colleges, with the sanction of the governing bodies to which they belong, have the power of forming a separate faculty in Theology, for the examination and granting of the degrees of Bachelor of Divinity, and Doctor of Divinity ; and such degrees shall be entitled to all rights and privileges as if they were granted by the University.

Further, it shall be the duties of the President of the said faculties in Theology to report respectively, from time to time, to the Chancellor of the University, upon the organization of such respective faculties, the granting of the degrees, and such other matters as the Chancellor of the University and the Presidents of such faculties may have agreed to, for the material benefit of said University and faculties.

By an amendment to the Act, passed at the last meeting of the Legislature, candidates in the Theological faculties are required to pass a University examination in Greek, Latin, and Mathematics.

Organization.—While a general agreement on the provisions of the Act was got with comparative ease, it was all along evident that the difficulties would begin when the multifarious regulations relating to students, their admission, standing, studies, &c., required to be fixed. The main difficulties have been met and overcome by the "Curriculum Committee" and their successors, the "Board of Studies." The Committee, consisting of two members from each College and a member of Convocation, compared, with great diligence and care, the systems of higher education, French *vs.* English, and of English *vs.* Canadian, and by patience and mutual concession reached, without a division, conclusions accepted by all the bodies concerned.

Their labors have been chiefly directed as follows ;—

(*a*) *Examinations.*—The system in vogue at St. Boniface is that in use in the Colleges in the Province of Quebec, and the University of Laval. The course of a lad extends over *nine* years. At the end of his seventh year an examination is passed—his first in the University—in Languages and Literature. These subjects are then omitted from his course of study, and two years spent at his College in the study of Science, (including Mathematics, Physical, Mental, and Moral Sciences,) after which the last examination,—his second in the University—is passed, and the successful candidate is entitled to his Bachelor Degree. It was found, on the other hand, that in a number of English and Canadian Universities, the University allows the affiliated Colleges to examine in all except *two* University examinations—one in the middle, and the other at the end of the third or fourth year's course—and then, two are compulsory.

Here, then, was a means of unifying the French and English systems. Some would have preferred more University examinations, but by arranging the subjects judiciously for the two examinations required, it is believed a sufficient test can be obtained.

Accordingly, two examinations for the ordinary B.A. degree are held necessary—the first called the *Previous*, the second the *Final*.

(*b*) *Admission of Students.*—Two modes of matriculating students are permitted.

(1) A student who has not completed his course in any of the affiliated Colleges, may pass an examination called the *Preliminary*, after which, in a year's time, he may proceed to the *Previous*, as a matriculation student. This examination may be taken by students of Colleges, and thus make a *third* University examination. It has been made compulsory in the students of the Manitoba College, going on with the University course, by the authorities of that College.

(2) A student of one of the affiliated Colleges who presents a certificate from the head of his College that he has completed the required College course, may go on to the Previous examination as a matriculated student.

(*c*) *Text-books.*—This subject afforded one of the greatest difficulties of the situation. Some slight difference as to the interpretation of the Act took place. Some maintained that to make out a *schedule of topics* best met the wording of the Act; others held that prescribing text-books was the best for the student, and most satisfactory for examiners. The difference of language afforded at length the means of settling the matter. It was found that the same text-book could very seldom be had both in French and English. Accordingly, text-books *corresponding* as much as possible were adopted, and the division rendered necessary by language was found nearly to coincide with the two lines of religious thought in the Council.

(*d*) *Subjects.*—Educationists differ so widely as to the comparative merits of Classics and Sciences, that more conservative or more progressive tendencies in this respect exhibit themselves among any combination of scholars. Probably the Western air, and the inevitable effect of the progressive movement in a new and rising country, made less trouble than usual in this matter. Modern Languages, Mental and Moral Sciences, are all dipped into, at least in the ordinary pass course for B. A., while "Natural Philosophy and Humanities" are by no means neglected.

(*e*) *Honor Courses.*—The very wise policy has been adopted of having several different Honor Courses proceeding to the degree of B.A. in Honors. The effect of this will be to encourage special excellence in certain selected and congenial departments. The discussion as to "Options," which took place in Ontario some time ago, and which has elsewhere been a "bone of contention," was fortunately omitted in Manitoba. Students, after passing the Previous examination of the University, may proceed to the Honor degree by one of the five courses:

1—Classics.
2—Mathematics.
3—Natural Sciences.
4—Modern languages.
5—Mental and Moral Science.

Prospects.—The examinations which are held in May annually began in 1878, so that only two have been held, and the first for final will be in 1880. These are conducted by printed papers and written answers. Thus far the examiners have been partly selected from the teaching staffs of the several colleges. This will probably become less and less necessary. This year six out of fifteen examiners are not on the teaching bodies of the colleges. At the first examination in 1878, seven students presented themselves; at the second in May, 1879, 16 students were present, and all the colleges were represented. So great an undertaking as the beginning of a university with imperfect resources might well fill its promoters with anxiety, but the disposition manifested to patiently meet and deal with differences of opinion give great hope for the future. The effort has certainly been to keep up the standard as high as the circumstances of the province will allow, to make the University useful in elevating the educational condition of the province, and to avoid the disgraceful "bathos" into which some of the Canadian Universities fell in their earlier years. A small grant for the necessary expenses is allowed by the Legislature, but no doubt the University will obtain its share of land set apart by the Dominion Government for purposes of "education," which amounts to one-eighteenth of the whole province. Necessary buildings must be erected; and it is to be hoped that the colleges on whose prosperity, after all, that of the University is based, will be made able to do their work by their friends. They are all three struggling, poor and proud, longing for new buildings and for firmer endowments. The cultivation of our people and the future character of our public men largely depend on them. Manitoba is the first of a series of great provinces to be reclaimed from the vast solitudes of the North-West; the beginning in self-government, social advancement, and educational organization in Manitoba will no doubt influence the newer provinces rising farther west. Quite possibly one of the first results of the University of Manitoba, receiving a respectable revenue either from her land grant or from bequests, will be the appointment of University Professors to supplement the work done in the colleges, which feel painfully the heavy responsibilities thrown upon them, and the weak teaching staffs at their disposal to prepare for the University examinations. Co-operation among the Colleges is also being spoken of to meet the want already mentioned. Every lover of his country must rejoice to see Canadian civilization spreading so rapidly; every true patriot will bid God-speed to all movements aiming at the advancement and enlightenment of the people, and will not withhold good wishes from our University, the youngest of the educational sisterhood.

Who loves not knowledge? Who shall rail
Against her beauty? May she mix
With men and prosper! Who shall fix
Her pillars? Let her work prevail.

HISTORY IN OUR PUBLIC SCHOOLS.

BY JOHN M'CARTER, HEAD MASTER PUBLIC SCHOOL, ALMONTE.

(*Published by request of the Lanark Teachers' Association.*)

Facts are the basis of history; reality is its very spirit and essence. It is made up, says Goldwin Smith, of human actions, whether these actions are political, military, social, religious, or of any other kind. These facts may be related in a variety of ways,

according to the taste, the ability, or the acquirements of the writer. They may be told in a dry unpalatable style, or in a style luscious as a honeycomb. If the bare facts are placed merely in juxtaposition, like beads on a string, history is certainly the most unreadable of all reading matter ; if, however, these facts are glued together by the proper cements, history may be made to possess all the fascinations of a novel.

The statesman might read a history of dry facts, because his object is to learn from the past how to administer the affairs of the future, and because he well knows that without a knowledge of such facts he can lay no claim to statesmanship. The philosopher might study such a book, because his aim is to find out the causes of these facts, and to observe the effects of which these facts are themselves the cause ; but such a book would not be read by one out of a hundred of those who usually read history. Only urgent necessity could induce the majority to read such a book.

A readable history is one that not only communicates information, but also gratifies the taste, excites the feelings and pleases the imagination. The author is anxious to instruct, but he is not less anxious to please. To do the latter, a great deal depends, of course, on his style, diction, etc., his ability to enlist the sympathies of his readers, to carry them along with him, and make them feel as if really actors in the scenes described.

All this is specially true of a history intended to teach young persons. A history for them must be a book pleasant to read. Wanting the quality of readableness, it wants everything ; if we wish to give young people a life-long disgust at history, we have only to set them down to an abridgement heavily packed with facts, names, and dates. The mind which has been compelled to bear such a load will soon let it drop like a burden of lead, and never lift it again.

Have we not put such books of history into the hands of our public school children ? Have we not and are we not using the merest abridgments, heavily packed with facts, names and dates ; the veriest dry bones of history, bleached and whitened, till not a particle of flesh is left—or, to vary the figure, we might say, the quintessence of history, undiluted by anything to thrill the heart, gratify the curiosity, or excite the imagination ?

And if such is the character of our school histories, is not the study of them doing more harm than good ? Are we not giving our pupils a life-long dislike to the whole subject, instead of cultivating in them a taste for it ? The late Rev. Wm. McKenzie, being one day in my room, took up Emilia B. Edwards' little book, and after looking at it for a few minutes, threw it down, with this remark, "What nonsense to expect children to learn history from such a dry affair as that."

If we had more time to devote to the subject, or only a very general outline of it to master, we might, without a text-book, with the aid of the black-board, little talks, pleasant stories, and other devices, break up a number of the hard crusts, moisten them if you will, and deal them out in dainty morsels, easy of mastication, deglutition and digestion. But it takes longer time, in my opinion, to teach a subject without a text-book than with one. Without one, the bulk of the work falls on the teacher, and the value of drill, in a measure, is lost to the pupil. But the time that must be devoted to other subjects renders it impossible to do in this history. The entrance examinations, speaking comparatively, demand considerable proficiency in reading, writing, spelling, arithmetic, grammar, geography, composition, Fourth Book work, etc., and if much time is spent on history, it must be at the sacrifice of one or more of these subjects. Before history was made a compulsory subject in our public schools, I spent half an hour more time in arithmetic than I do now. Indeed, we are so much crowded with other subjects, that I sometimes feel half inclined to think that it would be better to let history drop out altogether, or, at most, to retain it only to a very limited extent.

Many parents, I know, disapprove of it, and think their children's time would be spent to better purpose in other subjects. Some educationists condemn it as a public school study, on the ground that the mere facts of history, without the general laws which they teach, are of no account, while the philosophy of history is too deep for immature minds. Professor Bain contends that history is a subject proper only for the University. It is, to say the least of it, a debatable point.

No mere outline of the subject, however, will meet the requirements of the entrance examinations. We must come down to particulars, and select facts from the reign of every king and queen that has ever reigned in England. For proof of this take the following question from the July paper of 1877; "Edward III, my lords, had seven sons, and so on." After naming them all with their titles, the question is put: "Name in order the kings that reigned between Henry III and Henry VIII, and state from which of these seven sons each was descended." This question embraces eight kings and their descents, and requires a pretty exact knowledge of details to answer it. The examiner, no doubt, would smile at the audacity of such an insignificant mortal as I finding fault with his questions; nevertheless, I venture to say that such questions show a great lack of judgment in what may be expected from fourth-class pupils in our public schools. Nor is this question a solitary one. Any person acquainted with the entrance papers knows that many such might be cited. Then to show that we must travel over the whole length and breadth of English history, yes, and Canadian too, take the following two questions : 1st. Tell how the Roman Conquest of England was brought about, and what were the principal changes effected by it ? 2nd. When did Queen Victoria come to the throne, whom did she succeed, and what have been the principal events in the history of Canada during her reign ? The first of these questions takes us back to the middle of the century before Christ, the second brings us to the present. Is it reasonable, I ask, taking everything into consideration, to expect fourth-class pupils in ungraded schools to answer questions covering the whole extent of English and Canadian history, and embracing so many minute details? I, for my part, answer with a most emphatic no.

There is another very important consideration : We have no special text-book, guide, or standard for either examiner or teacher. Now, the mass of facts is so great that a selection of some kind or other must be made, and there being no special guide, every one is left pretty much to himself to make his own selection. But no two persons will think alike on the same subject, and consequently no two persons will make the same selections. Examine any number of different histories, even the most condensed, and you will not find any two of them agree. How many would fix on the eight kings and their descent as an important question ? I, for one, though I had canvassed the whole domain of English history, would never have marked it so. Take men holding different religious creeds, or men holding different political opinions, and see how widely they differ from each other in their views of the importance of historical facts ; and that too even in prominent events, such as the Reformation, Restoration, Revolution, etc. The consequence of all this is, that every teacher drills in what he deems important, and every examiner selects what he deems important and it may be the two classes of facts are wide as the poles from each other. Consequently our pupils will sometimes succeed very well, and at other times though equally well prepared, almost totally fail ; their success or failure depending in a great measure on the class of facts selected by the examiner, and the class of facts in which they have been drilled.

Now, in view of what we have said, it may be asked, what do we

want? Well, if we are to have history in our public schools—and I would not like to say we should not—I answer:

1st. We want one uniform text-book for all the schools of the Province. This book should be the guide of both examiner and teacher. The teacher may supplement it if he wishes, but no examiner shall go outside this text-book in selecting questions for the entrance papers.

2nd. We want this duly authorized text-book to be confined to one brief period of English or Canadian history. The present reign, we think, would be a very suitable period. It is certainly the most important to us, and the one with which we ought to be best acquainted. Being well informed in the leading features of this part of our history as a nucleus, we might work our way back, epoch by epoch, as opportunity presented itself, in our High Schools and Universities, till the whole subject was embraced. Some may say, this is beginning at the wrong end of the subject. I am not sure of that. The reign of Queen Victoria should be of more value to us than the battles of Julius Cæsar.

3rd. We want this book at least to be a somewhat readable book. It is not to be a mere bundle of dry facts, names and dates, placed side by side, like beads on a string, but a book giving of course the facts, but giving them in such a manner as to command the attention and excite the curiosity of the reader. But what if such a book cannot be had? Then, I would say, let us have the driest thing possible, a mere nomenclature of events, names, and dates, which we can commit wholly to memory. But we must insist that even this driest possible affair be, nevertheless, the sole guide of both examiner and teacher.

EDUCATION OF THE INDIANS.

To the Editor of the Canada School Journal.

SIR,—I have already, in the columns of your Journal, called attention to the efforts which are being made to place education within the reach of the Indian tribes in some of the outlying districts of this Province.* It is gratifying to know that these efforts are being systematically followed by the Indian Board of the Department of the Interior, and directed to those parts of the Dominion where Indian tribes or bands exist.

In a report which I prepared on the "Educational Features of the Centennial Exhibition" in 1876, I pointed out what was being done for the education of the Indians of the United States by the Department of the Interior there, and under the direction chiefly of various religious bodies.†

It may be interesting to note that the Indian population and schools of the Dominion at present, according to the report of the Minister of the Interior, are :—

		Schools.	Pupils.	Boys.	Girls.
Ontario	15,941	52	1695		
Quebec	12,054	10	327		
Nova Scotia	2,126	3	78		
New Brunswick	1,433	0	.....		
Prince Edward Island	266	1	25		
Manitoba and N.W. Territories	30,277	10	376		
Arthabaska District	2,498	0	214		
British Columbia	35,152	11	615		
Rupert's Land	3,770	0	.....		
Total	109,367	94	3230	1853	1377

Of these 94 schools, nine are supported either wholly by the Methodist Church in Canada, or partly by that Church and from the Indian Fund; three by the Church of England, either wholly or in part; three by the New England Company (also Church of England), either wholly or in part; twenty-eight from Indian funds and other sources, and the remaining fifty-one wholly from Indian funds. Seven of these schools are either wholly or partially industrial in their character. Most of the schools, however, report nothing more taught than the "Catechism," "singing, Scripture and Catechism," Scripture and needlework," "dictation, needlework and drawing," "Scripture talks and recitations," "Catechism and English," "Catechism and French," etc. In the various branches of secular learning there are (of the 3,230 pupils on the rolls) 3,137 reported in reading and spelling; 2,974 in writing; 1872 in arithmetic; 673 in grammar; 625 in geography and 161 in drawing."

From the report of the Minister of the Interior for 1879, the following interesting extracts are given. Speaking of the general condition of the Indian in our Dominion the Minister says :—

"The condition of the aboriginal inhabitants of the Dominion is on the whole not only satisfactory, but gradually and surely improving. In the other provinces they have in many cases attained to an intellectual standard not second to that of their white neighbors, engaging with much success in agriculture, mechanics, commerce and the learned professions, and taking a creditable part in social and religious life, and in the political government of the country.

Speaking of the condition of the schools in the various provinces the Deputy Superintendent-General (L. Vankoughnet, Esq.) says:

Ontario.—"An increased interest is apparently taken by the Six Nations in education. The school buildings are better constructed, and more competent teachers are employed. . . . On some of the reserves in the Central Superintendency (Hastings) there are as many as three or four teachers in operation in each, and in Tyendenaga a fourth school-house has been built. In the Northern Superintendency new schools were established. On the Missionary Reserve, on Blind River, north shore of Lake Huron, from the reserves at Henby Inlet and Sawanaga, in the Parry Sound district. At the Pic, on Lake Superior, a commodious school-house has also been erected by the Indians, and they have applied for a teacher. Near Sault Ste. Marie, a new industrial institution for Indian girls was brought into operation by the Rev. Mr. Wilson, the well-known and successful Principal of the Shingwauk Home—an industrial institution for boys at that place; and three boys, having acquired the trades respectively of tinsmithing, bootmaking and carpentering, left the latter institution and obtained employment at their trades elsewhere; while a fourth boy from the same institution was sent to fill the position of school teacher on Garden River reserve. At Wikwemikong, Manitoulin Island, increased facilities have been afforded to Indians desirous of placing their children at the Industrial Schools there to be educated, through the extension of the buildings during the past year. The well-known and long established Mohawk Institute, near Brantford, has also been greatly improved by a large addition to the main building, and the number of resident pupils now at that institution is ninety. At Christian Island, Georgian Bay, a good school-house has been erected during the year."

Quebec.—Mr. Vankoughnet says:—"Schools are established upon each of the reserves in this Province, and returns are regularly received therefrom; but it is to be regretted that they do not, with one or two exceptions, indicate much progress in the education of the pupils."

Nova Scotia.—The report states that "the few schools that have been established in Cape Breton are reported to be making favorable progress.

New Brunswick.—"The Department is negotiating for the erection of a school-house for the Indians owning the reserve on the Tobique River, Victoria County, there being a sufficient number of children of an age to attend school on that reserve. The Indian children on the reserves of Little Falls, Madawaska County, attend the Public School in the vicinity of the reserve. The Superintendent of the Northern and Eastern Counties reports that several of the Indian Boards are anxious to have schools established among them. A contract has been made for the erection of a school-house for the Indians living on the Burnt Church reserve, Northumberland County, there being a sufficient number of children of school age to warrant the establishment of a school there."

Prince Edward Island.—No educational report.

Manitoba.—"The benefit derived by the Indian bands among whom schools have been established is very marked, according to the Inspector's report. Twenty-four schools are in operation within this Superintendency; and the Inspector states that the intelligence disseminated by them makes a gratifying distinction between the Indian who is the recipient of their civilizing influences and his wild untutored brother, whose mind is still enveloped in ignorance and superstition. Returns have been regularly received from schools on the various reserves which receive subsidies from Indian funds; and the Department has furnished the requisite books and other school apparatus for properly conducting the schools to all that have applied for the same."

North-West Territories.—No educational report; but in regard to farming instruction, Mr. Vankoughnet says:—"The satisfaction with which the intelligence was received that the Government had sent them relief, and had appointed persons to instruct them in farming and herding cattle, was great; and the willingness which the Indians expressed to receive instructions in farming and to devote their energies thereto is encouraging. The Indian Commissioner (E. Dewdney, Esq.) reports that the policy of the Government in attempting to make the Indians of the North-West self-supporting, by instructing them in cultivating the soil, herding cattle, etc., will, in his opinion, prove a success. . . . . And even should the attempt prove a failure, the establishment of government farms throughout the Territories, with plenty of land thereon, to raise grain and root crops, will contribute largely towards diminishing the expense of feeding the Indians, should it turn out that such a course is inevitable."

British Columbia.—In the report of D. W. Powell, Esq., the Superintendent, there are a few incidental references to the schools established, but nothing of special interest.

Although there are some grounds for satisfaction in regard to what has been done in some places for the education of the Indians, yet the progress made has not been at all equal to what was expected when the report of the "special commissioner appointed to investigate Indian affairs in 1856" was issued. The present system, or probably lack of system, is too desultory and uncertain in its operation. No general plan has been agreed upon, and none, so far as I am aware, has been devised or promulgated by authority. This was probably to be expected in the altered state of affairs as regards the Indians which was caused by confederation. There was also a degree of uncertainty as to the attitude of the Indian tribes in the North-West Territories. Now, however, as things among them have settled down, and a policy in regard to the temporal and physical conditions of the Indians has been agreed to and acted upon, it seems a fitting time that a comprehensive and exhaustive enquiry should be made into the educational and industrial wants of the Indians in all of the provinces. Such an enquiry as that instituted in 1856, to which I have referred, is especially desirable, both in regard to the best interests of the Indians themselves, and for economic reasons. Large sums of money are being spent for the benefit of the Indians, but on no comprehensive plan designed gradually to change the nomadic habits of the Indian to those of the white settler, to furnish them with schools taught by well-trained teachers and conducted in a systematic and efficient manner.

Toronto, May, 1880. J. G. HODGINS.
Deputy Minister of Education.

*CANADA SCHOOL JOURNAL for October, 1879, pages 237, 228.

†See report, Part xi. pages 96, 98.

To the Editor of the Canada School Journal.

SIR,—I have read Mr. Harrison's views on my rendering of John i. 1, and while I acknowledge his very courteous criticism, I do not think it necessary to enter into any further discussion on the subject. Whatever I might say would probably be only a repetition of the views stated in different words; and as I have advanced all I can advance in defence of the passage, I am content to leave the result to the judgment of your readers. I think, however, that Mr. Harrison must have entirely misunderstood me when he refuses to be guided in the vocal rendering of any literary composition by the explanations of commentators. The commentator is supposed to be learned in all that constitute the difficulties of a passage. He analyses the thought and the language, and endeavors to throw every light upon whatever is doubtful and difficult. He may have no knowledge of the laws of elocution; but when more than one meaning can be attached to a difficult passage, the elocutionist will often derive the best help from the well-formed views of a thoughtful and qualified commentator. When, therefore, the commentator explains the exact nature and force of a reading which, like this verse in John, has a special meaning attached to every statement, the elocutionist is then prepared to give such emphasis, intonation and expression as will infallibly convey the meaning which the commentator has sanctioned. For my own part, I confess that I am often under the greatest obligations to commentators on Shakespeare when I have doubts as to the nature of the literary expression; and I must add that as the Bible presents greater difficulties in this regard than any English author, both because it is a translation and because it abounds in mysteries which perplex the profoundest thinkers, able commentaries are invaluable as guides to just delivery. In conclusion, allow me to suggest to Mr. Harrison that he and I, in our two communications, have, in a very humble fashion, been making our commentaries on the verse under discussion. We first comment and then we guide our rendering of the passage according to our commentaries.

Respectfully yours,
R. LEWIS.

CORRECT READING OF JOHN I. 1.

To the Editor of the Canada School Journal.

SIR,—Having read Mr. Lewis's letter and the remarks of J. M. H. Harrison, A.M., on the above subject, I am still of opinion that Mr. Lewis is right, for the following reasons:—

1st. I disagree with Mr. Harrison when he says that "with God" is only a secondary idea to the capital thought "the Word was God," also when he says, "if the Word was God it must have been with God," for, according to Gentile ideas, the Word might have been with God, but not God, or the Word might have been a God, but not the supreme God, that is, he might have been a rival God; but St. John says, the Word was *with* God, and the Word *was* God." Again, you would not say of two persons, "Cain was with Adam, and Cain was Adam," nor of one person, "Jacob was with Israel, and Jacob was Israel," but when the Evangelist wishes to teach the distinct individuality, and at the same time the complete unity of the Father and the Son, he says "the Word was *with* God, and the Word *was* God."

2nd. I consider Mr. Harrison's quotation unfortunate, because, while emphasizing "was," in the passage "In the beginning of this century the British Empire *was* a strong nation," might imply that it is *not* strong now, it could not have that effect with "was God,"

for once admit the divinity of the Word from eternity, and you must admit his divinity to eternity; that is, no one would suppose that God would cease to be God, and you would not go out of your way to prevent a person falling into an error into which he was not likely to fall.

3rd. As the word "Word" occurs three times in a short sentence, the emphasis on the first "Word" is stronger than on the other two, and the emphasis on "with" relatively stronger than it would be if the first proposision were omitted. Again, the word "God occurs twice, and the emphasis on the first "God" is greater than on the second, and consequently, the emphasis on "was" is relatively stronger than if the third proposition stood alone.

4th. If it be any satisfaction to Mr. Harrison I will admit that Dr. Watts agrees with him in one of his least effective stanzas, the third line being its weakness.

"Ere the blue heavens were stretch'd
From everlasting was the Word;
With *God* he *was*, the *Word* was *God*,
And must divinely be ador'd."

And lastly, as to Mr. Harrison's sneer about Barnes, Scott, and others, I will merely remind him that many of the best orators have known nothing of the rules, and many who were well up in the rules have been but ordinary readers, simply because, while the natural orator would be very little better for rules, the ordinary reader would be much worse without them.

J. H. KNIGHT,
Lindsay, May 20th. 1880. P. S. Inspector.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

UNIVERSITY OF TORONTO.

ANNUAL EXAMINATIONS, 1880.

First Year Mathematical Papers.

ARITHMETIC AND ALGEBRA.

Examiner: F. HAYTER, B.A.

1. Enumerate the points of difference between algebra and arithmetic.

2. Given $a=3$, $b=4$, $c=-5$, find the value of
$(3a+4b+5c)^2+(4a+3b+12c)^2-(5x+5y+13z)^2$
Given $a=2$, $b=1$, $c=0$, find the value of
$$(a^{b-c}+b^{c-a}+c^{a-b})\div(a^{b}+b^{c}+c^{a})$$

3. Simplify
(1) $\left(a-5b-\left\{a-(5c-\overline{2c-b}-4b)+2a-(a-\overline{2b+c})\right\}\right)$
(2) $a-2\left(b+3\left\{a-2(b-c)+2b-3(a-b+2c)\right\}\right)$

4. Find the value of
(1) $\dfrac{1+2x}{(3-x)(1+x)}+\dfrac{7}{(2+x)(1-3x)}+\dfrac{x}{(1+x)(2+x)}$
(2) $\dfrac{1-x}{1+x}+\dfrac{1-x-x^2}{1+x+x^2}+\dfrac{1-x-x^2-x^3}{1+x+x^2+x^3}$
(3) $\dfrac{x^{3n}}{x^n-1}-\dfrac{x^{2n}}{x^n+1}-\dfrac{1}{x^n-1}+\dfrac{1}{x^n+1}$

5. Describe Horner's method of division.
Divide according to Horner's method:
$4x^5-7x^4+25x^3-15x^2+8x+10$ by x^2-x+5
$6a^4-a^3b+2a^2b^2+13ab^3+4b^4$ by $2a^2-3ab+4b^2$.

6. Prove the rule for finding the least common multiple of two quantities.
Find L. C. M. of $(21x^2-26x+8)$ and $(7x^3-4x^2-21x+12$.

7. Solve
(1) $(12+x)^{\frac{1}{2}}=2+x^{\frac{1}{2}}$
(2) $\dfrac{x}{2}-\dfrac{\frac{1}{2}(2x-3)-\frac{1}{3}(3x-1)}{\frac{1}{3}(x-1)}=\dfrac{3}{2}\left(\dfrac{x^2+2}{3x-2}\right)$
(3) $\dfrac{66x+1}{1\cdot5x+1}+\dfrac{4x+5}{\cdot5x-1}=52.$
(4) $\dfrac{\sqrt{x}-\sqrt{a-\sqrt{a^2-ax}}}{\sqrt{a}+\sqrt{a-\sqrt{a^2-ax}}}=b.$

8. Find the fraction which, if 1 be added to its numerator, becomes $\frac{1}{3}$; but if 1 be added to its denominator becomes, $\frac{1}{4}$.

Two persons A and B could finish a work in m days; they worked together n days when A was called off, and B finished it in p days. In what time could each do it?

9. Solve
(1) $\left(x+22\right)^{\frac{1}{3}}-\left(x+3\right)^{\frac{1}{3}}=1$
(2) $\dfrac{(a-x)^4-(x-b)^4}{(a-x)-(x-b)}=\dfrac{(a-b)c}{(a-x)(x-b)}$
(3) $\begin{cases} x+y+xy=11 \\ x^2y+xy^2=30 \end{cases}$
(4) $\begin{cases} x^{\frac{3}{4}}+y^{\frac{3}{5}}=126 \\ x^{\frac{1}{4}}+y^{\frac{1}{5}}=6 \end{cases}$

10. The sum of two numbers added to the sum of their squares is 42, and their product is 15. Find the numbers.

If \$300 be laid out at simple interest for a certain number of years, it will amount to \$360. If the same be allowed to remain two years longer, and at a rate of interest one per cent. higher, it will amount to \$405. Find the rate and number of years.

11. Given the first term, common ratio, and number of terms in a geometrical progression, find the sum.

If a, b, c be in G. P. Prove
$$(a^2+b^2+c^2)>(a-b+c)^2$$

EUCLID.

Examiner: A. K. BLACKADAR, B.A.

1. Any two sides of a triangle are together greater than the third side.

If a point be taken within a parallelogram, the sum of its perpendicular distances from the sides of the parallelogram is less than the sum of the diagonals.

2. If the side of any triangle be produced, the exterior angle is equal to the two interior and opposite angles, and the three interior angles of every triangle are together equal to two right angles.

From the base BA, or BA produced, of the isosceles triangle ABC, BD is cut off equal to the side BC; from DC, DE is cut off equal to BC; prove that the angle DCA is double of the angle CBE.

3. Triangles upon equal bases, and between the same parallels are equal to one another.

The angle BCA of the triangle ABC is bisected by the straight line CE which meets AB in E; CA is produced to D so that AD is equal to BC; prove that the triangle CED is equal to the triangle ABC.

4. If a straight line be bisected, and produced to any point, the

rectangle contained by the whole line thus produced, and the part of it produced, together with the square on half the line bisected, is equal to the square on the straight line which is made up of the half and the part produced.

Produce a given line so that twice the rectangle contained by the whole line produced and the part produced may be equal to the square on the given line.

5. The angles in the same segment of a circle are equal to one another.

ABC is a triangle in the circle ABC; AOD is drawn from A bisecting the arc BC in D and meeting the side BC in O; prove that DB is a tangent to the circle through A,O,B.

6. If two straight lines cut one another within a circle, the rectangle contained by the segments of one of them shall be equal to the rectangle contained by the segments of the other.

Two circles with centres C and E touch each other internally at the point A; from the centre C of the smaller circle CB is drawn at right angles to CE meeting the circumference of the larger circle in B; and from E the centre of the larger circle ED is drawn parallel to CB meeting the circumference of the small circle in D; prove that the straight line AB is equal to straight line AD.

7. To describe a circle about a given triangle.

O is the centre of the circle inscribed in the triangle ABC; circles are described about the triangles BOC, COA, AOB, having as centres A',B',C', respectively; prove that

$$AO.OA'=BO.OB'=CO.OC'.$$

8. Define *similar rectilineal figures* and *reciprocal triangles.*

ACB, ADB are two triangles upon the same base AB and between the same parallels; AD and BC meet in O; shew that AOB, COD are *similar* triangles and COA, DOB are *reciprocal* triangles. Also, if EOF be drawn through O parallel to AB, shew that the quadrilaterals $CDOE$, $CDOF$ are equal.

9. In a right angled triangle, if a perpendicular be drawn from the right angle to the base, the triangles on each side of it are similar to the whole triangle, and to one another.

Construct a right angled triangle having given the hypotenuse and the difference of the squares on the two sides.

10. In equal circles, angles, whether at the centres or at the circumferences, have to one another the same ratio as the arcs on which they stand.

TRIGONOMETRY.

Examiner: CHARLES CARPMAEL, M.A.

1. Define the logarithm of a number, and explain what is meant by the "base" of a system of logarithms.

Shew that $\log. \frac{a^n}{b^m} = n \log. a - m \log. b.$

Find log. 175, and log. 6860.

Of what numbers are 2, 0, $\bar{3}$, 0.25 the common logarithms?

2. Find the logarithm of, the square root of $\frac{\sqrt{5} \cdot \sqrt[3]{577}}{49 \cdot \sqrt{686}}$, and of $\frac{\sqrt{\cdot 002}}{\sqrt[3]{\cdot 07}}$.

3. Define the terms sine, cosine, and tangent, and make a table of their variations in magnitude and algebraic sign from 0 to 180°.

Having given the tangent of an angle, find the sine and cosine.

4. Find the sine, cosine, and secant of 30° and 45°.

5. If ABC be a triangle, right-angled at C, shew how to find any of the quantities B, a, b, if A, c are given.

6. Prove that

$$\sin \overline{A \pm B} = \sin A \cos B \pm \cos A \sin B.$$
$$\sin 3A = 3 \sin A - 4 \sin^3 A.$$

7. Prove the following formulæ:

$$\cos \theta = \frac{1-\tan^2 \frac{\theta}{2}}{1+\tan^2 \frac{\theta}{2}} \qquad \sin \overline{45+\theta} \sin \overline{45-\theta} = \tfrac{1}{2} \cos 2\theta.$$

$$\sin^2 \theta - \sin^2 \varphi = \sin \overline{\theta + \varphi} \sin \overline{\theta - \varphi}.$$

$$\frac{\sin \theta + \sin 3\theta}{\cos \theta + \cos 3\theta} = \tan 2\theta. \qquad \tan 67° 30' = 1 + \sqrt{2}.$$

8. In any triangle, prove

(i) $\cos A = \frac{b^2+c^2-a^2}{2bc}$. (ii) $\cos \frac{A}{2} = \sqrt{\frac{s(s-a)}{bc}}$

9. Solve completely the triangles:

(i) $a = 1263$, $b = 1359$, $c = 1468$.

(ii) $A = 67°59'$, $a = 2045$, $b = 2000$.

10. Find the areas of the triangles in question 9.

11. The elevation of a tower is found to be 45°, and on retiring 60 yards it is 30°, find the height of the tower.

No.	Log.	No.	Log.	Angle.	L. Sin.
12630	·10140	20450	·31069	46°58′	9.86389
13590	·13322	30000	·47712	52°54′	9.90178
14680	·16673	57700	·76118	59° 7′	9.93360
14948	·17458	68600	·83632	65° 3′	9.95745
16124	·20747	70000	·84510	67°59′	9.96711
20000	·30103	78200	·89321		
		79561	·90070		

ALGEBRA AND TRIGONOMETRY—HONORS.

Examiner: CHARLES CARPMAEL, M.A.

1. Prove that

$$n^r - n(n-1)^r + \frac{n.\overline{n-1}}{\lfloor 2}(n-2)^r - \frac{n.\overline{n-1}.\overline{n-2}}{\lfloor 3}(n-3)^r + \ldots\ldots$$

is $= \lfloor n$ if $r = n$, and is $= o$ if r be less than n.

2. Enunciate and establish the principle of Indeterminate coefficients.

Employ it to find the sum to n terms of the series

$$1.\ 1^2 + 2(2^2+1^2) + 3(3^2+2^2+1^2) + \ldots\ldots$$

3. Prove that a series is convergent if the ratio of each term to the preceding be less than some assignable quantity which is itself less than 1. Will this test apply if the ratio being always less than 1 approaches 1 as its limit?

Determine whether the series whose n^{th} term is $\sqrt{n^2+1} - n$ is convergent or divergent.

4. What are figurate numbers? Shew by induction that the figurate numbers of the r^{th} order are the successive coefficients o the binomial expansion of $(1-x)^{-r}$.

If ${}_pf_q$ denote the p^{th} number of the q^{th} order, prove that

$${}_mf_{r+s} = {}_1f_r \cdot {}_mf_s + {}_2f_r \cdot {}_{m-1}f_s + {}_3f_r \cdot {}_{m-2}f_s + \ldots\ldots + {}_mf_r \cdot {}_1f_s.$$

5. Shew that any convergent is nearer to a continued fraction than any other fraction having a smaller denominator than the convergent has.

If $\frac{p_n}{q_n}$ be any convergent to $\frac{1}{1+} \cdot \frac{2}{2+} \cdot \frac{3}{3+} \ldots\ldots$, prove that $p_n + q_n = \lfloor n+1$.

6. Find the number of divisors of a given composite number, and the sum of the cubes of these divisors.

7. If θ be the circular measure of an angle $< \frac{\pi}{2}$, shew that the limiting value of $\frac{\sin\theta}{\theta}$, and of $\frac{\tan\theta}{\theta}$, when θ is indefinitely diminished, is 1.

If $f(\theta)$ be a function of θ given by the equation $f(2\theta) = (1-\tan^2\theta) f\theta$, and $f(0) = m$, shew that $f(\theta) = m\ \theta \cot \theta$.

8. If $27r^2$ is less than $4q^3$ shew that the roots of the equation $x^3 - qx - r = 0$ are

$$2\left(\frac{q}{3}\right)^{\frac{1}{2}} \cos a, \text{ and } 2\left(\frac{q}{3}\right)^{\frac{1}{2}} \cos\left(\frac{2\pi}{3} \pm a\right)$$

$$\text{where } \cos 3a = \frac{r}{2}\left(\frac{3}{q}\right)^{\frac{3}{2}}.$$

9. Shew that $\sin a = a - \frac{a^3}{\underline{|3}} + \frac{a^5}{\underline{|5}} - \frac{a^7}{\underline{|7}} + \ldots\ldots$

$$\cos a = 1 - \frac{a^2}{\underline{|2}} + \frac{a^4}{\underline{|4}} - \ldots\ldots$$

10. If n is a positive integer, prove that

$$2\cos n\theta = (2\cos\theta)^n - n(2\cos\theta)^{n-2} + \frac{n(n-3)}{1\cdot 2}(2\cos\theta)^{n-4} - \ldots$$

$$\ldots + (-1)^r \frac{n(n-r-1)\ (n-r-2)\ldots(n-2r+1)}{\underline{|r}}(2\cos\theta)^{n-2r} + \ldots$$

11. Shew that

$$\cos x = \frac{e^{x\sqrt{-1}} + e^{-x\sqrt{-1}}}{2}, \quad \sin x = \frac{e^{x\sqrt{-1}} - e^{-x\sqrt{-1}}}{2\sqrt{-1}}$$

Find the sum to n terms of series.

$$\sin a + c\sin(a+\beta) + c^2\sin(a+2\beta) + \ldots + c^{n-1}\sin\{a+(n-1)\beta\}.$$

12. Resolve $\sin\theta$, and $\cos\theta$ into their factors.

Shew that

$$1 + \frac{1}{3^2} + \frac{1}{5^2} + \frac{1}{7^2} + \ldots\ldots \text{ to infinity} = \frac{\pi^2}{8}$$

$$1 + \frac{1}{3^4} + \frac{1}{5^4} + \frac{1}{7^4} + \ldots\ldots \text{ to infinity} = \frac{\pi^4}{96}.$$

ANALYTICAL PLANE GEOMETRY—HONORS.

Examiners: A. K. Blackadar, B.A.; F. Hayter, B.A.

1. Investigate the equations to a straight line in the following forms:—

$$\frac{a}{x} + \frac{y}{b} = 1, \ (2)\ y = mx + c, \ (3)\ \frac{x-x'}{A} = \frac{y-y'}{B} = r.$$

Shew that the area of the triangle formed by the three straight lines

$$\frac{a}{x} + \frac{y}{b} = 1 = \frac{x}{b} + \frac{y}{a} \text{ and } x + y = \frac{1}{2}(a+b), \text{ is } \frac{1}{8}\frac{(a-b)^3}{a+b}$$

2. Find the angle between the two straight lines,

$$Ax + By + C = 0 \text{ and } A'x + B'y + C' = 0,$$

and deduce the condition of perpendicularity and that of parallelism.

Shew that the two straight lines represented by the equation $ax^2 - 2(1-b)xy - ay^2 = 0$, bisect the angles between the two straight lines represented by $bx^2 - axy + y^2 = 0$.

3. Shew how the position of a point is expressed by the method of *polar co-ordinates*.

Find the distance between two points whose polar co-ordinates are given.

4. Write down the general equation of the second degree, and find the co-ordinates of the centre.

What is the condition that the equation may represent (1) central curves, (2) non-central curves, (3) two parallel or coincident straight lines?

If the equation

$$ax^2 + by^2 + 2nxy + 2mx + 2ly + c = 0$$

represents two intersecting straight lines, shew that

$$abc = (l \pm \sqrt{l^2 - bc})(m \pm \sqrt{m^2 - ca})\ (n \pm \sqrt{n^2 - ab}).$$

5. Obtain the equation of a circle. What does the equation become when the circle is referred to a pair of tangents as axes?

Find the locus of the centre of a circle which passes through a given point and touches a given straight line.

6. Find the equation to the *Radical Axis* of two circles, and shew that if from any point of it straight lines be drawn to touch both circles, the lengths of these lines are equal.

7. Find the tangent and the normal to an ellipse at any point.

If from the point P on an ellipse a normal PUV be drawn meeting the major and minor axes in the points U and V respectively, prove that

$$\frac{PU}{PV} = \frac{b^2}{a^2}.$$

8. If in the ellipse or hyperbola two diameters be such that one of them bisects all chords parallel to the other, then the second will bisect all chords parallel to the first.

If tangents at P and D, ends of conjugate diameters of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$, meet in the point T, and if (x', y') be the co-ordinates of P, and (x, y) those of T, prove that

$$\frac{x}{a}\left(\frac{x'}{a} + \frac{y'}{a}\right) = \frac{y}{b}\left(\frac{x'}{a} - \frac{y'}{b}\right).$$

9. Prove the following focal properties in an ellipse:—

(1) $SC = eAC$.

(2) $SP + PH = 2AC$.

(3) If SP meets CD in E, shew that $PE = CA$.

The four foci of a complete hyperbola lie on a circle, which also passes through the points where the directrices meet the hyperbola, and circumscribes the rectangle formed by the tangents drawn at the ends of the major and minor axes.

10. Write down the equation to the parabola in its simplest form, and shew that the ellipse ultimately becomes a parabola when one vertex and focus are fixed and the major axis increases without limit.

11. Find the equation to the chord joining the points of contact of two tangents drawn from any point $(x'y')$ to a parabola.

Investigate a method of drawing geometrically a pair of tangents to a parabola from a given point, and prove that the chord joining the points of contact of these tangents is bisected by the diameter through the given point.

PROBLEMS.—HONORS.

Examiners: Charles Carpmael, M.A.; A. K. Blackadar, B.A.; F. Hayter, B.A.

1. Find a point within an isosceles triangle such that its distance from each of the base angles in half its distance from the vertical angle.

2. If an exterior angle of a triangle be bisected by a straight line which likewise cuts the base; the rectangle contained by the sides of the triangle, together with the square on the line bisecting the

angle is equal to the rectangle contained by the segments of the base.

3. If x, y, z, be the perpendiculars from the angles of a triangle on the opposite sides, and if

$$\frac{1}{x}+\frac{1}{y}+\frac{1}{z}=\frac{2}{\sigma},$$

prove that

$$4\sqrt{\frac{1}{\sigma}\left(\frac{1}{\sigma}-\frac{1}{x}\right)\left(\frac{1}{\sigma}-\frac{1}{y}\right)\left(\frac{1}{\sigma}-\frac{1}{z}\right)}=\frac{1}{\text{area of triangle}}.$$

IV. Prove that every power of the sum of two squares may be divided into two parts, each of which is the square of an integer.

V. Find the sum of the series

$$\frac{4}{1\cdot5}+\frac{9}{5\cdot14}+\frac{16}{14\cdot30}+\frac{25}{30\cdot55}+\ldots\ldots \text{ to } n \text{ terms.}$$

the last factor in the denominator being the sum of the other factor and the numerator.

VI. If n be prime, prove that any number in the scale whose radix is $2n$ ends in the same digit as its n^{th} power.

VII. If $\frac{p_r}{q_r}$ be the r^{th} convergent to $\frac{\sqrt{5}+1}{2}$ prove that

$$p_3+p_5+\ldots\ldots+p_{2n-1}=p_{2n}-1\ ,$$
$$q_3+q_5+\ldots\ldots\quad q_{2n-1}=q_{2n}-q\ .$$

VIII. Find the number of combinations that can be made out of the letters in the following line:

$$\alpha\pi\alpha\pi\pi\alpha\pi\alpha\iota,\ \pi\alpha\pi\alpha\pi\pi\alpha\pi\pi\alpha\pi\alpha\pi\pi\alpha\pi\alpha\iota.$$

taking them (1) 5 together, (2) 25 together.

IX. If $\varphi(r)=\lfloor n\left\{\frac{1}{\lfloor r\ \lfloor n-r}+\frac{1}{\lfloor r-1\ \lfloor n-r+1}\cdot r+\frac{1}{\lfloor r-2\ \lfloor n-r+2.}\cdot\frac{(r-1)(r-2)}{1\cdot2}+\ldots\right\}$

prove that

$$2[\varphi(0)+\varphi(1)+\ldots\ldots+\varphi(n-1)]+\varphi(n)=3^n.$$

X. Eliminate x, y, z from the simultaneous equations

$$\begin{cases}\frac{a}{x}=\frac{1}{y}+\frac{1}{z}\\ \frac{\beta}{y}=\frac{1}{z}+\frac{1}{x}\\ \frac{\gamma}{z}=\frac{1}{x}+\frac{1}{y}\end{cases}$$

Why are these three equations sufficient for the elimination of the three unknowns?

11. If $A+B+C=\frac{\pi}{2}$, shew that

(1) $\cot A+\cot B+\cot C=\cot A\cot B\cot C$.

(2) $\tan A+\tan B+\tan C=\tan A\tan B\tan C+\sec A\sec B\sec C$.

12. ABC is an equilateral triangle; circles are described on AB and AC as diameters; tangents are drawn through the points B and C. Prove that the radius of the circle touching these tangents and the two circles is very nearly one-eighth of the side of the side of the triangle.

13. On the side BC of the triangle ABC are drawn two equilateral triangles, $A'BC$ and $A''BC$; likewise, the equilateral triangles $B'CA$, $B''CA$ and $C'AB$, $C''AB$ are drawn on the sides CA and AB respectively. Prove that

$$A'A\cdot AA''=B'B\cdot BB''=C'C\cdot CC''.$$

XIV. If (p, q, r) be the perpendiculars on the sides of a triangle ABC from the centre of the circumscribing circle, prove that

$$aqr+brp+cpq=\frac{abc}{4}.$$

XV. A circle is described through the foci of an ellipse and any point on its circumference. Two tangents are drawn to this circle through one extremity of the major axis. Shew that the locus of the points of contact of these tangents is a circle whose radius is equal to the minor axis of the ellipse.

16. CP, CD are conjugate semi-axis of an ellipse; PNE is drawn parallel to the minor axis CB, meeting the major axis in N and CD in E. Prove that the area of the triangle

$$PCE \text{ is } = 2\,CB^2\cdot\frac{PN}{CN}.$$

17. OA and OB are asymptotes of a hyperbola; CEI a tangent perpendicular to OA; from C the foo. of this perpendicular CD is drawn at right angles to OB. Prove that every perpendicular drawn from the curve to CD or CD produced will subtend at E, where the tangent CEI meets the hyperbola, a constant angle.

18. TP, TQ are two tangents to an ellipse at right angles to one another, S a focus, prove that

$$\sin^2 SPT+\sin^2 SQT=\text{constant}.$$

Practical Department.

ELOCUTIONARY STUDIES.

BY RICHARD LEWIS, PROFESSOR OF ELOCUTION, TORONTO.

MARK ANTONY'S ORATION.

(Julius Cæsar, Act III., Sc. II.)

Passages of great dramatic power and excitement follow the announcement of Antony to the people that he holds in his hands the will of Cæsar. He affects to restrain their wild violence, yet by hints and suggestions he whets their appetites to fury. Skilfully, yet as if by accident, he says

"Tis good you know not that you are his *heirs*;
"For if you should, O what would *come* of it!"

The manner of saying this depends so much on a full conception of its spirit, of the assumed terror of doing wrong, of exciting his audience to commit the violence to which he is inevitably urging them, that no hard rules will suffice, the reader must conceive and interpret as poet and actor, to do the passage justice.

But now we enter upon a passage in which Shakspeare combines the profoundest knowledge of character with the highest efforts of oratorical skill and passion. The multitude has been conquered, won over to his designs. But that is not enough. Antony's purpose is to destroy the murderers of Cæsar, and that purpose and destruction must have all the semblance of public virtue and justice. He must hurl the vengeance of public wrath, roused to fury on their heads, and conceal his motive under the semblance of pity for the dead.

Let the student mark now that the speaker descends in obedience to the demand of the people, professedly to read the will, but in reality to strengthen every sentiment of pity and horror for the crime and of hatred against the assassins. He therefore holds up the mantle rent with their daggers and covered with the blood of Cæsar. It is a human instinct to pity the dead. Its solemn aspect, its silent helplessness is an appeal to our best and tenderest sympathies. We forgive our very enemies, when death has taken away power to harm us. But Cæsar had made the people his heirs—they had no reason to doubt his generosity. Yet Antony knows the triumph of Roman arms was dearer to Roman patriotism and national pride than the richest legacies. So, holding up the mantle covered with the blood of Cæsar before their eyes, that they may feel how great a national loss they have had, he reminds them that the first time he ever put on this dreadful witness of cruelty and ingratitude he had "overcome the Nervii," "the stoutest warriors of all the Belgæ," when Cæsar had exhibited the highest valour

and ability as a general. Now it is the skill of the orator that we are contemplating, and the reader must be guided by all these considerations to give the best effect, such as Antony must have given, and Shakspeare conceived, to the passage. It is the preparation for the storm of passion that instantly follows, and ends in all that Antony desired.

"You all do know this *mántle*:"

(*given rather as a question than a statement*).

"I remember |
"The first time | ever Cæsar put it on;
"'Twas on a *summer's evening* | in his tent."

These lines must be read with gentleness of manner, the voice tremulous with tender memories—all marking the skill of studied thought and delivery. The succeeding line is uttered with awakening animation, as if the memory of the glorious event had suddenly flashed on the speaker's mind,

"*That day* | he *overcame* the NERVII."

Now Antony has their ears and their hearts, and with irresistible passion and power he points to the marks of the bloody crime against their benefactor:

"LOOK,—in this place | ran CASSIUS' *dagger* through."

"Look" must be delivered with full and explosive force, followed by a brief pause, that all eyes may be fixed on the mantle. Then with the vehemence of passion he adds, "in this place ran *Cassius'* dagger through. Evidently "Cassius" is the leading word, and not "dagger." They all know that these are the marks of daggers, but Cassius was the most relentless of the conspirators. It is against the *men*, not against the weapons, that Antony is invoking judgment.

"See what a rent | the envious *Cascà* | màde:
(1) Through this | the well-beloved BRUTUS stàbb'd
(2) And, as he pluck'd his *cursed* steel awáy—
(3) *Mark*—how the *blood* of *Cæsar* | *follow'd* it,
(4) As *rushing* out-of-doors | to be resolved—
(5) If BRUTUS | so unkindly knock'd or no."

Only three of the slayers of Cæsar are named, and Brutus is the last, since he is not only the most criminal because the most ungrateful, but the most formidable by his professions of patriotism and his moral influence over the people. Line (1) therefore must be read with greater solemnity and dignity, as if Antony mourned to think how he had "fallen from his high estate." The conjunction "and" of line (2) is delivered in the same high pitch as line (3), which it connects; and to distinguish the subordinate from the principal, the pitch must be lower and the time more rapid in reading the clause "as he pluck'd," &c; yet there must be no weakening of force—it is suppressed hatred bursting into power momentarily on "cursed." But when the reader begins line (3) he returns to the same elevation of pitch and force with which he started upon "and." This is an example of what Dr. Rush calls the emphatic tie, and forms one of the most delicate distinctions of good from bad reading. Then from "Mark" onwards he is swept along by passionate sympathy with the murdered.

"For *Brutús*, as you know, was Cæsar's *angèl:*
Júdge, O you góds, how dearly Cæsar *lóved* him!"

In reading the apostrophe to the gods, the manner of the orator changes from sympathy with the dead to the solemnity of religious fervor. The appeal is exclamatory and ends with the rising inflexion; but the spirit is that of religious awe; the audience for the moment is forgotten, and with hands and eyes uplifted, the speaker by that solemn apostrophe deepens the horror of his hearers, and gives the murder the dignity of political martyrdom. But the interruption is only momentary, for he never forgets himself nor his great purpose.

(1) "This | was the most unkindest cut | of-*àll*:
(2) For, when the noble Cæsar saw *him* stáb.
(3) INGRATITUDE—more strong than *traitors'* árms
(4) Quite | vanquished | him: Then burst his mighty heart."

Lines (1) (2) (3) are to be read with fervor, rising on "ingratitude" into fierce indignation, sustained and growing fiercer on "traitors' arms," then passing into mournful dirge-like solemnity with an expression of tenderness, marked by the tremor of the voice, on "quite vanquished him." The passages that follow demand special study, and the best conception of the surrounding circumstances and the character of the audience. Cæsar fell at the base of Pompey's statue, and Antony excites in his audience a supernatural horror by asserting that the statue of Pompey bled in sympathy with the murdered Cæsar, and the best skill of the reader must be displayed in giving effect to this sentiment.

(1) And, in his mantle muffling up his face,
(2) Even at the base of Pompey's statue,
(3) Which all the while ran blood—*great Cæsar fell.*

Line (1) must be read solemnly with appropriate action, and high enough to allow the voice to descend in pitch on line (2). Then, after a brief pause, the reader must assume a still deeper tone and more solemn manner, as if filled with awe, when he contemplates so dread and miraculous an event. A brief pause follows, that the impression may tell with the best effect, and this gives Antony breathing time to complete the sentence which began with "and," its connective, and to deliver the words "great Cæsar fell" with full oratorical power. From this clause to the end of the paragraph, the display of passion is lofty and irresistible, and demands on the part of the reader the highest elocutionary skill.

(1) "O, what a *fall* | was there | my countrymen!
(2) Then *I*, and *you*, and ALL of us | fell down,
(3) Whilst *bloody treasón* | FLOURISH'D over us.

All the delivery of this passage is to be marked by fierce energy, yet the reader must be careful that the voice has nothing harsh in it. The quality must be a pure orotund, and the force explosive in character. But in the succeeding lines the manner changes to an affected admiration of the sympathy which the people are evidently displaying. Their sobs and tears possibly touched the heart of Antony; but they gave him the best assurance of success, and after the word "soul" he gives way again to an indignation which bears all before it, and rises to a climax on the last word "traitors."

(1) "O, now you weep, and I perceive you *feel* |
(2) The dint of PITY."
(*prolong this word and throw tremor into the voice.*)
(2) "These are *gracious* drops.
(3) Kind sóuls,—*Whát* | *weep* you | when you but behold
(4) Our Cæsar's *vestúre* wóunded? Look you *hère*,
(5) Here IS HIMSÈLF,—MÁRR'D—as-you-see with TRAITORS."

Let the reader be sure he gives the emphasis to "vesture" with the rising inflection and not to "wounded," as the contrast lies between "vesture" and "mantle," which he now with dramatic art flings away, and "himself"—Cæsar marred with wounds.

Now he has almost accomplished his purpose—the people are wild with the desire for vengeance. But the Will has not been read, and with an affected concern for the public peace the orator checks them that he may give new impulse to their passions in one final burst of eloquence, the crowning and immortal peroration of his speech.

(1) "Good *friends* | *sweet* friends, let *mè* not
stir you up
(2) To such a sudden flow of *mutíny.*
(3) *Thèy* | that have done this deéd | are *hònorable.*

(*Give the bitterest expression of irony, by means of the circumflex intonation to "honorable."*

(4) What prívate griefs | they háve I knów nòt,
(5) That *máde* them do it: They are *wise* and *honorable,*

(6) And will no doubt with reasons—answer you.

(Give equal irony to "reasons." They would have plenty of *them* to give.)

(7) I came not, friénds, to steal away your *heárts*:
(8) I am nò *oratór* as *Brùtús* ís;
(9) But, as you know me all, a plain blunt màn,
(10) That *love my friend;* and that | they know full well |
(11) That gave me public leave | to speak of him.
(12) For I have neither wit, nor words, nor *worth*
(13) To *stir men's blood*: I only speak | *right on.*

In the delivery of the passages from (7) to (13) Antony assumes an off-handed bluntness, as if he did not pretend to be an orator equal to Brutus. This is not only in keeping with the temper of the people, who, no doubt, had wearied under the studied and rhetorical sentences of Brutus, and preferred a man who professed to be no orator and spoke right on; but it renders them more susceptible to the burning and lofty passage that closes the oration.

(1) I will tell that | which you yourselves | do *knòw;*"

(Another appeal to their judgment and their vanity.)

(2) Show you sweet Cæsar's *wounds,—poor, poor dumb mouths.*

Here Antony *feels* what he says, and the reader must utter the words in italics which express that natural emotion in tones of tremulous pathos and tenderness.

"And bid THEM speak *for* me."

This line demands renewed energy, and altogether the reader must prepare by conception of the spirit in which Antony closes, and by physical control of voice, to give the grandest effect to passion, and by kindling of passion to give fire and irresistible force to the language in which the passion is clothed.

"But were I BRUTUS,
And Brutùs ANTONY, there *wère* an Antony
Would *ruffle* up your spirits, and put a *tòngue* |
In *every wound* of Cæsár—that should *móve*
The STONES of Rome to *rise* and MUTINY."

Let the reader note that Antony had begun this peroration by imploring the people with an affectation of earnestness "not to rise and *mutiny.*" It is then with more terrible effect that this rebuke falls upon their ears, and after a brief reference to the will he sends them forth, the ministers of his vengeance and the instruments of his will.

"Now let it work. Mischief thou art afoot,
Take what course thou wilt."

The highest value I can attach to this analysis is that it may be suggestive. The reader may form a different conception of the passage and of the feelings and motives that influence Antony. But that is the very issue desired. If the student allows himself to be entirely guided by the hints and rules put forth in these papers, his renderings will be tamely, lifelessly mechanical. *He* must study the passages as the great actors, who are always the best interpreters of dramatic poetry, study them. They fathom the meaning and the spirit of a thought; they seek for the special word which embodies that spirit and thought, and then with fastidious anxiety they give it the vocal interpretation, ascertain what pitch and intonation and force it shall have, so that it shall not have a mere theatrical effect, but all the power and truth of nature, and all the delicacy and beauty and finish of Art. But, besides all this, which may after all be rigidly correct, but rigidly mechanical, the reader must *feel* as if he were the very character which genius has created; and the study of passages like the one under consideration, in something of the method indicated, cannot fail to strengthen taste and judgment, and develop that imaginative power by which the reader becomes the true artist, and realises to himself and his hearers the true spirit of a composition.

Several typographical errors occurred in the first paper on this speech, which the writer will correct in his next contribution.

SYSTEMS OF ELEMENTARY EDUCATION IN READING.

BY PROFESSOR HOLBROOK, LEBANON NORMAL SCHOOL, OHIO.

The prevailing systems of teaching beginners to read may be divided into two general classes.

A. The NAMING SYSTEMS, which proceed by teaching names of letters, not teaching their sounds.

B. The SOUNDING (OR PHONIC) SYSTEMS, which present sounds first, and as the essentials, the names of the letters being given as the teacher chooses.

Of the NAMING SYSTEMS there are two.

(*a*) The *Letter System*, which first presents the names of the letters and then passes to the words.

(*b*) The *Word System*, which first presents words, then passes to letters.

The SOUNDING SYSTEMS may be grouped, first, into

(*c*) The *Romanic Systems*, or those preserving the common spelling, and, second,

(*d*) The *Phonetic Systems*, or those using only the letters or characters necessary to represent the actual sounds of the words.

Although the most prevalent, the *Naming* Systems have the least claim to be called systems, since they involve only the most general principle that can enter into an arrangement of subject-matter for instruction, namely, that the simple should precede the complex; and even this is observed in many presentations of these systems with very little practical skill. One of the most popular and practical exemplifications of the (*a*) *Letter* System is the "McGuffey's Pictorial Eclectic Primer," first issued by W. B Smith & Co., in 1849, then with improvements by Sargent, Wilson & Hinkle in 1867, and finally by Van Antwerp, Bragg & Co., as "McGuffey's New Eclectic Reader," with numerous valuable changes.

A very interesting presentation of the *Word* System may be found in "The Little Teacher. No. 1. First Book on the Word Method," by the same firms. This affects also to arrange for the teaching of the sounds, but the selection of the words does not indicate the slightest regard to that feature.

The scientific objection to the Naming Systems is that, in teaching them, those fundamental processes of every method, analysis and synthesis, are impossible. *Names* of letters cannot be reconstructed into words, neither can words be separated into names of the letters. There is a mere mechanical separation of the printed words into the printed letters in the *Word* System, and juxtaposition of the letters to form the printed words in the *Letter* System, but between these *performances* and any *method* there is no possible connection. They are two parallels which can never meet.

This fatal objection is entirely overcome in the SOUNDING or PHONIC Systems. They all permit either or both of the fundamental processes. I would better say *both*, only, for no method is complete which does not involve both the analysis and synthesis. To start with one and omit the other is wrong. To start with the other and omit the one is wrong. To start *always* with one and close with the other is wrong. The correct teacher will sometimes start with analysis, sometimes with synthesis.

The teacher, therefore, who subjects his practices to any scientific test, or, more probably, who has learned the sounds of the language well enough to teach them, will surrender both of the NAMING Systems for some one of the PHONIC Systems, and begin to study and recognize the differences upon which the latter are based.

While he appreciates the advantages of a phonetic language and the consequent theoretic superiority of the *phonetic* system, he is

compelled to remember the prevalence of the common spelling as well as the prejudice awakened by the phonetic spelling, and therefore to conclude upon the practical superiority of the *Romanic* Systems. While perhaps reform urges the *Phonetic*, he soon learns that while he *may* be a reformer, he *must* be a teacher.

Some one of the *Romanic* systems must then be chosen. This requires the examination of the new text-books, for the materials of the old, having no reference to the sounds, can hardly be adapted to a PHONIC system. He knows that, in this day of pedagogical enlightenment and publishing enterprise, he may expect to find a first reader that will meet his most scientific and practical demand.

In this mood, the young teacher is liable to let some theoretical considerations with reference to the selection of the sounds, overbalance his practical judgment concerning the nature of the young mind, and perhaps he will learn only by experience that sensible sentences, with a few phonic irregularities, are much better than such sentences as could be formed with words meeting strictly the phonic demands.

Having reached this point, he will then realize the advantage and necessity of diminishing the phonic difficulties by giving the letters which have different sounds, certain marks to indicate those sounds. For such a purpose he will naturally prefer the diacritical marks of the dictionary.

A first reader which most perfectly meets these practical and theoretical demands of the Romanic Systems, and which sets forth lessons in a style most beautifully illustrated and artistically constructed, is that of the revised edition of the Series of McGuffey's Eclectic Readers, just published by Van Antwerp, Bragg & Co.

The first lesson is a marvel of artistic and pedagogical skill. What better theme than the dog? How could the theme be made more alluring, introduced as it is by two really good engravings of a dog, one occupying a full page? The only possible sentence is "The dog ran," yet it involves phonic difficulties. For instance, *th* a digraph, the sound of *e* in "the," the sound of *g* hard, yet these sounds are practically unavoidable, and the slight objections to them are entirely counterbalanced by the usefulness of the words "the" and "dog." The sound of *e* in "the" is undoubtedly *e* long, its dubious character being entirely due to its obscuration by being unaccented. There has been much needless hair-splitting here. Let the sound be taught as *e* long, but let the word "the" be always unaccented, that is, when it ought to be. The *e* in "desire" presents the same peculiarities.

The same remarks apply to the article "a." Its real sound is *a* long, as can be easily determined by accenting it, for instance, in the following sentence: "I mean *a* not *the* book." Whatever change of sound it has in other positions is because of obscuration from not being accented. To attempt to teach these obscurations is unnecessary, as well as impossible.

Again, in this lesson, the word "the" is to be taught as a whole without analysis, until the fifth lesson, where *e* long is introduced. It is to be considered an extra unaccented syllable of the word it precedes. So also the article "a" introduced in Lesson III.

In presenting this first lesson, the teacher may hesitate as to whether to teach the sounds first, and with them form words, or to teach the words, and by decomposing them teach the sounds. It matters little which process is first. The important thing is that *both* are faithfully taught. This is true, that failure in giving pupils *power* to discover new words, the sounds being known, is more likely to follow when the *words* are taught first, for the reason, that the words being known, the necessity of the sounds to discover these words is taken away. Here is just the mistake of many phonic teachers, and the reason that they settle back upon the *Word* System, concluding it is not worth the while to bother with the sounds. Let the teacher always remember that the sounds of the letters are to be *used* by the pupils to discover new words, and that after the first few lessons, a new word should never be pronounced by the teacher, until the pupils have first formed it with the aid of the known sound which it contains, and the unknown sound if there be any, which the teacher may pronounce; and when a new word is pronounced first by the teacher it should be to give the pupils the enjoyment of discovering the sound of the new letter which it may contain.

Again let it be impressed, that the teacher use *both* processes, never as a mere routine, but always to lead the pupils to independent discovery. The wire edge of curiosity should never be dulled by telling the pupil what he is (or should be) able and anxious to find out for himself. The passion for "hunting" should never go unutilized. Let the teacher lead the chase, but let the pupils be "in at the death," and have the satisfaction of dealing the mortal blows.

A very common objection to a new reader presenting a new system is:—If, after old readers are changed for new, and old systems for better, it is found that from the incompetency of the teacher, or other reasons, the new systems cannot be made practicable, the new books will be unavailable for the old methods.

There is some force in this as against *Phonetic* Systems, but not the least as against the *Romanic*. On the other hand, it is strikingly true that while a NAMING-System reader cannot be easily adapted to any SOUNDING Systems, yet any text based on the *Romanic* System, such as the reader referred to above, is *better* adapted to the NAMING Systems than a NAMING-System reader itself, for the reason that whether he is taught the sounds or not, every pupil learns the secret that letters do stand for sounds before he reads independently, and, therefore, that selection of words which makes the letters most consistent, such as is made in every *Romanic*-System reader, will serve to diminish those difficulties of the pupil which the teacher ignores, and shirks even, by not teaching the sounds of the letters.

These few points and directions, which, it is hoped, have been made more practical by referring to particular readers, are general in their application.

KEEPING IN.

M. J. HAW IN "THE EDUCATIONAL JOURNAL OF VIRGINIA."

So much has been said and written on this subject, that I should consider its further discussion entirely superfluous but for the fact that a somewhat kindred subject, that of judicial penalties, after a still more extensive and thorough discussion, is yet considered an open question. Public opinion throughout Christendom, with regard to the punishment of civil offences, is very decidedly in favor of clemency, so far as it is compatible with security and good order. This, too, is the theory of the most advanced and successful educators with regard to school discipline; and it is generally carried into practice in institutions under the management of such, as well as in the public schools under State control. Yet, as in these days of liberal and advanced political views there are still absolute monarchs, so, in spite of the revolution in school discipline since the era of Dotheboys Hall, there are still absolute pedagogues, whose rules are as rigorous and whose punishments as severe as if no arguments had ever been advanced in favor of mildness.

Lord Brougham's aphorism, "The *best* governed States are the *least* governed," applies as well to school discipline as to civil government. The best informed and most successful teachers are agreed that in the government of the school there should be as few rules as possible, and that these should allow the pupil as much

latitude as is compatible with the object in view. They are agreed also that the punishment for the infraction of the rules should not be in every case very severe. Very few of the most enlightened and humane among them have declared in favor of the total abolition of corporal punishment. As a class, these consider that it ought to occupy the same place in school discipline that capital punishment does in the criminal code, only to be resorted to on rare occasions and in extreme cases. There is, however, much diversity of opinion regarding the comparative efficacy of minor punishments, such as "bad marks," "keeping in," etc.

Where the child's sensibilities are not blunted, and his conscientiousness and self respect are cultivated, almost anything which passes for punishment will answer that end. But I think the most proper and efficacious of all punishments, that which meets the greatest variety of cases and can be adapted to the widest range of offences, is "*keeping in.*" Adults, who have been disciplined by the habit of long years to quiet and confinement, have no conception how irksome, how absolutely torturing they are to a child, nor how long a minute seems to him under such circumstances, how interminable an hour.

As to civil government, jails and penitentiaries have so largely superseded the block and the gallows, so confinement and lessons out of school hours may be made to take the place of the rod to a very great extent for aggravated offences, the term being continued from day to day. This punishment is highly favorable to salutary reflection, and does not excite the tempest of angry and vindictive passions aroused by whipping. For imperfect lessons, which is far the most common offence requiring correction, "keeping in" is unquestionably the best remedy. The idleness or incapacity of those who do not study, is generally accompanied by a lack of sensibility and self-respect, which renders them totally indifferent to low figures in daily, monthly, or sessional reports. For gauging a child's mental calibre there is no test like "keeping in." For the delinquent to be imprisoned in the school-room when the other pupils are enjoying the liberty of the play-ground, with the teacher's eye upon him, and to be assured that as soon as he knows the lesson before him he will be allowed to join in the sports of his companions, and that until he does know it he will be kept in durance, will effectually bring out all his application and capacity. Idleness, unless hereditary and constitutional, will very soon yield to this remedy. Stupidity, alas! has so far resisted all remedies. How to "rear the tender thought" in a perfect vacuum, and to teach the "young idea how to shoot" from an utterly barren soil, is a problem yet to be solved. However, that it cannot be done by whipping is a fact too well established by thorough and extensive experiment to be further questioned. The human mind never entertained a wilder absurdity than the notion that a child's intellect can be stimulated or developed by irritating his tactile nerves. Moreover, to whip a dunce merely because he is a dunce, is a crime in the sight of Heaven. It would be just as humane and reasonable to whip the blind to make them see, the deaf to make them hear, or the lame to make them walk.

EDUCATIONAL PRINCIPLES.

If we endeavor to ascertain the mode by which human beings learn, we soon perceive that one proceeds precisely as another; in other words, that the method is in accordance with a fixed principle. Hence those who teach should proceed according to fixed principles. Among these fixed principles, in accordance with which intelligence acts, the one that appears most prominent is self-employment.

1. *Unceasing activity is the index of intelligence.*—As soon as the child obtains the use of his eyes, he employs them; when he can use his hands and feet he employs them. He needs constant watching. Once he sat on his mother's lap, now he glides down and is busy with his new found powers. The teacher must impress this law deep in her mind. She is not to think of the school-room as a place where the children are to be "kept still," no matter what tradition may have to say; nor as a place where reading, writing, etc., are to be taught—but where the children are to *exercise their activities.*

2. *Employ the Senses.*—Many will admit that children are active and need employment, but they give inappropriate employment. They furnish occupation for the memory only. They put long rows of children on benches and set them to learning abstract things. Before he could read well the writer was set to learn that "A had four sounds, as heard in fame, far, fall, fat; B has one sound, as heard in ebb; C has two sounds; it is soft before e, i, y, and hard before a, o, and u," etc. This was in accordance with the directions of the county superintendent, a man of learning and ability. "The pupils must be made thorough," was his main direction. To be "thorough" may be a maxim, but not a principle.

Let the teacher, then, who thinks of a school-room, not people it with children, all busy with a book, and herself at a desk overseeing them. But let her think of a company of children actively employing their senses. Childhood lives in the world of its senses; it is a work of time and development to create a world of ideas. No teacher can implant ideas; that the ongoing development of the mind will do; a proper employment is what is needed. Here is the significance of the great discovery of Froebel; so antagonistic was it to the popular idea of the school that he was called in his time "a fool," because he collected the children and played with them.

3. *Proceed from the known to the unknown.*—The foundation already laid in the mind at the earliest period is the power to attend to and interpret sensation. And so, at any period there is a solid ground or shore against which the new material must be impacted, and to which it adheres, and into which it grows. To know this state or condition of the mind is indispensable to the teacher, and besides, he must know how to go out into the unknown. The child has never seen a hammer; when presented, he touches it, his mind seizes the sensation and acquires an idea; if similar to the sensation it has received in touching other bodies it notes it, or if unlike; if the latter, it proceeds to ascertain in what particular the unlikeness consists, etc. Then it proceeds to experiment with the hammer, and finds out it can pound with it better than with any other thing it has yet had. This becomes a known quality henceforth.

It is in this way the child acquires all information, and hence the first question this true teacher asks herself is, "What do these children know?" and then, "What is the appropriate knowledge for them next to acquire?" And finally, "In what way shall this unknown be presented?" Instead of education being that easy art, within the grasp of any young boy or girl that chooses to undertake it, it is really a difficult and intricate business. The teacher must study perpetually to know the secrets of the human mind, its modes of acquiring, using, and retaining knowledge.

(*a*) *There is a natural order in the procedure by which we educate.* The teacher in calling up before her the exercises of a school, must not deem she has a real school when classes in reading, writing, etc., succeed each other. All this may happen and no education be imparted. The central point is the growth or development of the mind—on this the attention must be constantly fixed. The question is not, are these children learning to read, but are their minds growing? The order to be chosen must be that which will develop the mind, add to its power, enlarge the faculties and encourage further progress. For example, you wish to teach the idea of a fraction (not how to operate with number-fractions); you take an apple and cut it into two parts; you take a stick and cut that, etc. The child learns that all things can be divided into parts; you ask him, "Can I cut the sugar into parts?" He will answer "Yes." You wish next to show that halves are greater than thirds. You will proceed to cut an apple into halves; then one of equal size into thirds. Then comes the question, which is the largest, this or that? Of course this step is dependent on the preceding one, and should follow and not precede it. So of all teaching.

It is important that two rules be noticed here. First, go step by step. That is, go so that a conclusion is dependent on what has gone before. Some imagine that to teach children the only thing needed is a miscellaneous collection of *small thoughts*—a mental hash—but no mistake is greater. And second, the teacher must measure the amount of education the child is getting *by his capa-*

city to use. The child is not to be treated like an empty vessel to be filled. No person is so likely to be deceived as the routine teacher; she thinks a pupil is learning because she is laboriously imparting!

(*b*) *The subject to be presented for the thought of the pupil must be reduced to its elements.* One difficulty is enough; two will distract the attention. Suppose it is numerical addition. The teacher writes the numbers under each other; this is enough for a lesson, perhaps for several lessons; begin with single figures; write these, one beneath the other; then three, then four, and so go on, until the pupil can do it without a distinct effort of thought or without bestowing attention upon it. Then write numbers of two figures; write two, then three, etc., etc.

No better illustration can be given than the art of painting with water-colors. The artist puts in a wash of color, so thin that it is hardly different from the paper on which it is laid; when this is dry, *i. e.*, incorporated with the paper, another is laid on, etc. The best artist is the one who grades the tints the most perfectly. To teach well, *tint, tint, tint.*

(*c*) *Ascertain the need of a term before the term is given.* A child has seen a dog and knows its name; when he sees another dog he feels no need of a term. But show him a bird and he instantly cries "what is it?" This is the voice of nature. The procedure should be the same. You wish to teach him to use the terms noun and verb. *It is in vain unless he recognizes a difference.* To show him ice in a vessel and tell him it is ice, and not let him ascertain that it is solid, would not be an educative process. Yet, very much teaching is of this kind.

(*d*) *The order of nature must be followed in presenting subjects to the mind.* To teach geography, begin with the ground under the feet of the scholar. To teach any subject, present the whole and direct attention to its parts. Explain the processes gradually. To show a pupil a piece of cotton, then to show him it can be twisted, then to explain the principle of weaving, and finally to exhibit cloth; then the great varieties of cloth—would not be in accordance with the natural order. We acquire knowledge in the reverse way; we learn a little of many things, then a little more of each, etc., etc.

(*e*) *Go over the ground many times.* The common maxim or direction of repeating again and again is much abused. Repetition without thought or attention is hurtful. The boy learns to catch a ball by much practice, but he employs his powers at every repetition; nay, he uses more and more effort. For example, the child learned yesterday that some leaves have stipules; to-day the teacher will repeat the term, will ask for leaves with stipules. In succeeding lessons the term will come up again and again, until it has become a part of the child's vocabulary. The art of teaching requires a teacher to repeat with *variety.* Dull repetition is very bad. A disgust is imparted to the work, and then a process of deterioration has set in.

(*f*) *There must be a practical result.* To know simply for the sake of knowing is not in accordance with nature. A child applies the object it has seized to its mouth, and therein results knowledge and gratification. To look at a picture of a strange animal, qualifies and instructs. We have many appetites and desires that can be gratified; there is a desire for knowledge, yet it is ever with an object. Some objects are more apparent, and some more remote than others. An education is a practical art.

The above survey should be carefully studied. Day by day the teacher should endeavor to proceed in accordance with these principles. Let him frequently ask, "Why do I teach in this manner?" He will not unfrequently find that the only answer he can give is, "It is the traditional way." But this will not be enough. He *must* proceed according to science, or he is no better than a cobbler or a tinker. He should put a principle underneath his *practice.* By proceeding in an intelligent way he will produce results that will surprise him; he will find his occupation one that will invigorate him; he will renew his strength; he will run and not be weary; walk and not faint.—*New York School Journal.*

READING IN COMMON SCHOOLS.

BY G. H. BURNETT, KESWICK RIDGE, NEW BRUNSWICK.

A great many teachers do not know or seem to think what their object is in teaching reading. Of course many, if asked the question, would say, "My object is to make my scholars good readers." Now, let us see if we can find out what is meant by good readers, and how they become such. *Good readers are those which make themselves understood and also please their hearers.* Our aim is not merely to produce theatrical readers; although some have this idea when they are drilling their pupils in vocal gymnastics.

I. *Reading must be understood.* To accomplish this the reader must understand what he is reading, and be able to make others understand him. In order that he may understand it, it must be within his grasp, not containing words or expressions which convey no meaning to his mind. It is a great mistake to try to make children read well, when they do not know what they are saying. A great deal of poor reading is chiefly owing to this fact. The child on the playground will utter an exclamation of surprise or ask a question which the highest art cannot excel; but when he comes into his class what a great difference there is! Then the reading lesson must be brought down to the level of the child's understanding, and must be of interest to him, and something he can sympathize with. So, if any emotion is to be brought out, he will do it naturally, because he knows what he is reading and wishes to make others know it also.

The reader must be able to make himself understood. Nothing is required to be said about this, because it is purely natural. When we have ideas and wish to express them in words, nature has given us the gift of speech which fully answers our requirements.

II. *Reading must please.* The emotions of the piece must be felt in order to be pleasing to the ear, and the reader's voice and manner must be agreeable. To make the emotion felt, the reader must feel the emotion himself. If the emotion of pleasure occurs he must feel pleased, and so with any other emotion.

The reader's manner must be in harmony with the sentiment of the piece, and must not be such that it will attract our attention or draw our minds from what he is saying. Bad habits of standing and restlessness must be avoided, and right habits established by means of suitable physical exercises. But the principal means of pleasing and gaining the attention of the listener is varied intonation. The human voice has great power when judiciously used. This is where the most training is necessary, to make it obedient to the will. Let the teacher practise various intonations, and let the pupils imitate him. High and low Pitch, different degrees of Force and Movement, the different qualities of Tone, upward and downward slides and waves are to be drilled upon until they are at the ready command of the pupil, and can be given when asked for.

1. *Cultivate a love of reading* by giving the pupils interesting pieces to read, and frequently reading some interesting story, so that they will read for the pleasure of reading.

2. *Give them abundant exercise in voice practice,* so that they can give pleasing and varied sounds. If this is done gradually, they will learn to take great pleasure in the use of their voices.

3. *Teach them how to apply their voices* by illustration, and abundant and varied practice in reading and recitation.

Our main object in teaching reading in common schools is to root out faults and make *natural,* not *artificial* readers.

THE TEACHER WHO IS A GROOVE-RUNNER.

B. F. TAYLOR.

The most useless of stupidities is the teacher who is a groove-runner; who has swallowed text-books without digesting them, and feeds his pupils with the morsels, as old pigeons feed squabs, until, like himself, they are are all victims of mental dyspepsia, which is a curious synonym for education. Children subject to such diet

are as likely to get fat and strong as so many grist-mill hoppers, that swallow the grain without grinding the kernel. Such teachers forget that one, like Judah's sister "Feeble Mind" in Cooper's Novel, have a prodigous memory. Who has not known a fool who remembered everything he heard, and just as he heard it, who could run up and down the multiplication table like a cat upon a ladder, and rattle off rule after rule without missing a word; and that was all there was of it—he was a fool still! A good memory built upon a well-made intellectual structure is a noble blessing, but that same memory with nothing to match it, is like a garret without any house under it; a receptacle of odds and ends, that are worth less than those papers that losers of lost pocket-books are always advertising for, "of no value except to the owner."

Take English grammar under the man of groove. Learning to swim upon kitchen, buying a kit of tools and so setting up for carpenters, are all of a piece with his grammar. Hear them defining a prep'sition as "connecting words, and showing the relation between them," when not one pupil in a hundred ever finds out whether it is a blood relation or a relation by marriage. Hear them parse: John strikes Charles. 'John is a noun, masculine gender, third person, because it's spoken of, sing'lar number, nom'native cast t' 'strikes.' 'Strikes' is an irreg'lar, active, trans'tive verb, strike, struck, stricken, indicative mood, present tense, third person singular, and 'grees with John. Verb must 'gree with its nom'native case 'n number and person. 'Charles' is a noun, masculine gender, singular number, third person, 'cause it's spoken of, objective case, and governed by 'strikes.' Active verbs govern the objective case—please, sir, S'mantha and Joe is a-makin' faces!" And all in the same breath! What ardor! What intellectual effort! What grooves! Meanwhile grammars mended, amended, and emended, multiply. There are four things anybody can do: Teach a school, drive a horse, edit a newspaper, and make a grammar. Meanwhile the same old high crimes and misdemeanors against the statutes are daily committed. This comes of grooves, and the lack of a professorship of common sense.

Take geography. The young lady fresh from school, who from a steamer's deck was shown an island, and who asked with sweet simplicity, "Is there *water* the other side of it?" had all the discovered islands from the Archipelago to Madagascar ranged in grooves and at her tongue's end. "Didn't you know?" said the father to the son who expressed great surprise at some simple fact, "didn't you know it?" "Oh, no," replied the little fellow; "I *learned* it a great while ago, but I never *knew* it before!"

Take arithmetic Show a boy who has finished the book, and can give chapter and verse without winking, a pile of wood and tell him to measure it, and ten to one he is puzzled. And yet he can pile up wood in the book, and gives you the cords to a fraction, but then there isn't a stick of fuel to be measured, and that makes it easier, because he can sit in his groove, and keep a wood yard. "So you have completed arithmetic," said the late Professor Page, of the State Normal School, to a new-come candidate for an advanced position; "please tell me how much thirteen and a half pounds of pork will cost at 11½c a pound?" The price was chalked out in a minute. "Good," said the professor; "now tell me how much it would cost if the pork were half fat." The chalk lost its vivacity, the youth faced the blackboard doubtingly, and finally turning to the teacher with a face all spider-webbed with lines of perplexity, and with a little touch of contempt at the simplicity of the "sum," and, possibly of himself, he said, "It *seems* easy enough, but I don't know what to do with the *fat!*" That fellow was not a fool, but a groove-runner. A little condition was thrown in that he never saw in the book, and that groove of his had never been lubricated with fat oil.

—*Pennsylvania School Journal.*

SCIENCE OF EDUCATION—DEFINITIONS AND GENERAL PRINCIPLES.

Education is that perfecting of the individual which prepares him for practical usefulness.

2. That system of education is best which prepares the individual for the highest and the greatest usefulness.

3. Teaching is developing, instructing, and training mind.

4. Teaching is essential to education.

5. That method of teaching is best which best secures the chief object of education.

6. The mind can only be properly developed, instructed, and trained by the proper exercise of its powers and faculties.

7. In order to the proper exercise of the mental powers and faculties, suitable material must be furnished as subject matter for the exercise, and the mind must be properly directed in such exercise.

8. Since the pupil can only furnish a portion of the subject matter suitable for mental exercise, it is a part of the teacher's work to provide such material.

9. Since the pupil, comparatively undeveloped, uninstructed and untrained, cannot, unaided, so direct the exercise of his mind in using suitable material as to secure the most beneficial results, it is also a part of the teacher's duty to aid the pupil in securing such results.

10. The proper exercise of the mental powers and faculties upon suitable material will result in useful knowledge, development, and training.

11. That knowledge, development and training alone, is useful, which contributes to the perfection of universal being.

12. That culture, knowledge and training is most useful, which secures this object to the greatest extent.

13. The most useful culture, instruction and training, contribute most largely to the perfection of universal being by securing the highest individual perfection.

14. Hence it is the teacher's imperative duty to secure such culture, instruction and training to his pupils.

R. A. WATERBURY.

Notes and News.

ONTARIO.

Hon. Adam Crooks has returned from England.

Messrs. J. King, Berlin; S. Woods, Kingston; and A. F. Campbell, Toronto, have been elected members of the University Senate.

The half-time system has been introduced into the Galt schools, and seems to be both beneficial and popular.

A prize for blank verse, open to undergraduates of Albert College, presented by Mr. S. J. Bull, and competed for by six students, was won on Saturday last by M. J. McGill.

The London (Ont.) School Board recently passed the following resolution: That home studies are necessary within reasonable and proper limits; and if any irregularity exists in the apportionment of home studies in the various schools, that the Inspector be requested to correct the same, and to establish uniformity, as far as possible, in the schools of equal grades.

Peterborough School Board has appointed a committee to prepare a form of prayer for use in the schools of that town.

In Reeves *vs.* the Colborne Board of Education, the plaintiff was non-suited. The action was to recover $460 on a contract for graining, fencing and constructing outbuilding, for the Colborne school house. The claim was resisted on the ground that the work was not properly done. The remarkable feature of the case was that the Chairman of the Board acted as foreman to Reeves, the contractor. Reeves took no part in the work himself.

Mr. Spotton, the able Head Master of Barrie Collegiate Inst., has recently had the honor conferred upon him of being appointed a fellow of the Linnæan Society of Great Britain.

At the Teachers' Convention, at Picton, the following resolutions relative to the superannuation of teachers, were adopted: 1st. That 25 years' service in the profession, or having reached the age of 50, should entitle a teacher to superannuation: 2nd. That the widows of all superannuated teachers should be entitled to no less than three-fourths of the yearly allowance granted to their husbands; 3rd. That no part of the yearly subscription to the funds should be repaid to teachers who retire from the profession before ten years' service; 4th. That in case a tax be imposed upon candidates for certificates, the money so paid should go to supplement the superannuated teachers' fund; 5th. That a copy of these resolutions be forwarded to the Hon. Minister of Education.

The following candidates were successful in passing the last professional examination at the Ottawa Normal School: *Males*—Wm. George Armour, Francis Barkey, Frederic Wm. Barnett, Samuel Cameron, Adam S. Case, Wm. Patrick Coates, Thos. W. T. Cook, Cyrus Coombe, Robert G. Croskery, John Edward Crowle, Walter T. Cody, Archibald E. Duke, Isaac A. Erratt, Wm. T. Ferguson,

Wm. A. Graham, James E. Hanna, Anthony R. Hanks, Francis Leigh, Millard Maybee, Wm. Moore, Anthony Mott, Newby S. Muir, Duncan McDougall, Alex. McDonald, John McJanet, Peter McLaughlin, Philip P. Park, Alfred T. Platt, Wm. Prince, Chas. B. Rae, Hugh S. Robertson, Wm. A. Robinson, Andrew Robinson, Chas. Roberts, Wm. Ed. Rose, Edward S. Roy, Alfred J. Shields, Harry F. Sharpe, John C. Smith, Alexander Stackhouse, Joseph H. Thompson, Daniel C. Throop, Allen H. Weagant, Thomas F. Young. *Females*—Christina Allan, Annie Conlon, Mary E. Crepar, Charlotte Dunbar, Dorothea J. Hall, Fannie E. Hislop, Catharine M. Keane, Ida Bell Leavens, Jessie E. Mair, Louise M. Marsh, Helen E. Melville, Evelyn M. Macdonald, Jennie A. Patterson, Clarissa Patterson, Emma Jane Powell, Elizabeth Robertson, Mary N. Simpson, Elizabeth Smith.

The *Brantford Expositor*, in speaking of the Brantford Collegiate Institute, says that during the past five years its students have won at matriculation in Toronto University 2 scholarships in Mathematics ; third scholarship in General Proficiency; a fifth scholarship in the same ; a second scholarship in Classics ; a first rank in General Proficiency ; a second rank in Mathematics ; a second rank in French ; a first rank in German ; six first-class honors in Classics ; 8 first-class honors in Mathematics ; 8 first-class honors in English ; 3 first-class honors in History and Geography ; two first-class honors in German ; one first-class honor in French, and a long list of second-class honors. In Victoria University they have won four first scholarships in Classics, two first in Mathematics, and two first in General Proficiency. In McGill University, a first scholarship in Classics, a first in General Proficiency, two first ranks at Senior Matriculation in Civil Engineering. In the University of Trinity College one obtained a second scholarship in General Proficiency, and in Queen's College another obtained a first scholarship in Classics. Besides these, two obtained scholarships at Knox College, and 134 were successful candidates at the Intermediate examination, not including a large number who passed successfully the examinations for law, medicine and third-class certificates. At the recent matriculation examination in the University of Toronto, the following honors were obtained : A First Scholarship in Mathematics ; Third Place in First Class Honors in Classics ; Second Place in First Class Honors in French ; First and Fifth Places in First Class Honors in German ; six obtained First Class Honors in English ; one obtained First Class Honors in History and Geography. Besides these last mentioned honors, one of the students in 1879 obtained a first-class certificate on six months' preparation, and out of 67 candidates, 44 passed the non-professional teachers' examination, the highest number passed by any other Institute or school in the Province at the same examination being 35.

NOVA SCOTIA.

The Teachers' Association for Annapolis County, referred to in last month's notes, was organized at Lawrencetown, on the 29th April. L. J. Morse, A. M., Inspector of District No 4, presided at all the sessions. Mr. E. J. Lay (Grade A), Principal of the Annapolis Academy, was elected Vice-Principal ; C. F. Hall, (Grade A), Secretary-Treasurer ; J. M. Langley (Grade A), S. C. Shafner (Grade A), M. L. Fields (Grade B), and A. D. Brown (Grade B), Managing Committee. The enrolled membership comprised upwards of seventy teachers, of whom fifty-two were actually engaged in teaching during the then current term. The Superintendent of Education was present at several of the sessions, and in the evening of the 29th addressed a crowded audience in one of the village churches, on the present status and outlook of education in Nova Scotia. Formal papers as follows were read : *The Multiplicity of Studies in Public Schools*, by E. J. Lay ; *A Uniform Course of Study for our Public Schools*, by J. M. Langley, A. B. ; *Health in the School Room*, by F. Primrose ; *Elocution*, by Miss N. R. Grant ; *School Government*, by C. S. Phinney ; *Success in Teaching*, by C. F. Hall. These papers were all of a high order of merit, while some of the special views expressed elicited earnest and interesting discussion. A valuable contribution to the profit of the meeting was *An oral lesson on Multiplication and Division of Common Fractions*, by Mr. M. L. Fields. A "Question Box" gave opportunity to consider both speculative and practical aspects of the educational problem. The Association is regarded as equalling in good results any yet organized in the Province.

The corner stone of the new Pictou Academy was laid on the 24th ult., by the Superintendent of Education. An account of the ceremony, with a description of the building, will appear in next month's journal.

J. S. Merton, Esq., A.B., has resumed the Principalship of the Shelburne Academy.

NEW BRUNSWICK.

The Board of School Trustees of St. John has received a valuable addition in the person of Silas Alward, Esq. M.A., Barrister-at-Law, etc.

Alex. Barntill, Esq., was appointed by the Government last month to be a member of the Board of School Trustees for the town of Portland.

The St. Stephen press gave full and flattering accounts of the terminal examinations of the schools of that town, claiming that their staff of teachers were second to none in the Province. Among the teachers named were J. Arthur Freeze, A.B., C. B. Wathen, Jas. Lawson, Geo. J. Clarke, J. B. Bogart, Miss Annie M. Harvey, Miss Dowling, Miss Emma Morrison, and Miss Robinson. Special interest seems to have centred in the High School, where the graduating exercises of the class of 1880 drew a large assembly and gave much satisfaction,—and in the primary department taught by Miss Harvey, whose tiny pupils always do so well and seem so happy as to delight everybody. The Lorne medal at the High School was won by Miss Emily Markee.

Mr. David Wilson, B.A., on taking leave of his school in district No. 3, Lancaster, St. John, was the recipient of a gift of valuable books from his pupils. He has taken charge of the Grammar School at Georgetown.

The Grammar School at Bathurst is still in charge of Mr. G. W. Merserean, B.A., who succeeds well under many difficulties.

Several teachers who were on the staff in the city of St. John last term, have retired, some of whom were mentioned in our May number, and others are Mr. Wm. Bennett, Mr. Coleman, Principal of St. Malachi's Hall, Mr. Baskin, Mrs. McDermott, Mrs. Dienaide, and Mrs. Helena Kirk. Most of the vacancies are filled by transfers. Among the new appointments are Mr. Henry Town, Mr. John McKinnon, and Mr. C. C. Connolly, B. A.

Mr. J. F. Horseman, B. A., has taken the place at the Collegiate School, Fredericton, vacated by Mr. Sims.

The York County Teachers' Institute met at Fredericton on the 20th and 21st of May, and was a pleasant and profitable gathering. About seventy teachers enrolled themselves as members—the whole number employed in the county being nearly 150. E. Mullin, Esq., the Inspector of Schools for the 7th district, was elected President, Miss Francis J. Ross, Vice-President, Mr. R. S. Nicolson, Secretary-Treasurer, Messrs. B. C. Foster, B.A., and G. H. Burnett, additional members of the Committee of Management. The principal matters that engaged the attention of the Institute were as follows. *1st Session.*—Address by the President and informal speeches on a variety of topics by the Chief Superintendent and several other gentlemen. *2nd Session.*—Illustrative lecture by Professor Fowler, of the Normal School, on the Chemistry of the Atmosphere,—intended specially to show how lessons in chemistry and physics may be illustrated experimentally without the aid of expensive apparatus. *3rd Session.*—Address by H. C. Creed, M.A., on "How to teach Canadian History." *4th Session.*—Paper on "Plain Sewing and Knitting as a part of school instruction," by Miss Ross ; paper on "Health in the School Room," by Dr. Patterson ; address by Mr. Nicolson, on the use of the white-board instead of the black-board, for lessons on color and for other purposes. *5th Session.*—Visit to the museum of the Provincial University, and lecture (at the University) by Prof. Bailey, on "The Minerals of New Brunswick." *6th Session.*—Report and discussion on time tables ; Conversation in reference to the specimens of manual work displayed by the teachers of Fredericton ; Question Box ; fixing time and place for next meeting. The display of manual work on slates and paper, just mentioned, was one of the most interesting features of this Institute. Each teacher had furnished three specimens (best, medium and poorest) of each kind of pencil or pen work done in each grade of pupils under his or her instruction. The object was to show the general character of the work rather than the excellence attained by any teacher or pupil. The exercises were only marked with the number of the grade and the age and sex of the pupil. Discussions followed the several papers read before the Institute, the speakers being Inspector Mullin, Dr. Rand, Principal Crocket, G. R. Parkin, M.A., H. C. Creed, M.A., Jas. Fowler, M.A., J. R. Mace, B.A., J. Meagher, R. S. Nicolson, Berton C. Foster, B.A., J. T. Horseman, B.A., Frederick Carpenter, E. Everett Miles, G. H. Burdett, C. A. Murray. W. T. Day, J. W. Sherwood, Miss Ross, Miss Brymer, Miss Loring, Miss Lyle, Miss Thorne, Miss Duffy, Miss Pickard,

and others. The Institute is to meet next year in October, when all the teachers in the County are to be invited to furnish specimens of certain kinds of work done by their pupils.

At the formal opening of the Summer Session of the Provincial Normal School, on Wednesday, the 5th of May, there were present, His Hon. the Lieut. Governor, the Chief Spperintendent of Education, the President of the University, Prof. Fletcher, the teachers of the Model Schools, and several other visitors, both ladies and gentlemen. The usual inaugural address was given by the Principal, who was followed by Dr. Rand, Dr. Jack, and His Honor.

Dr. Rand made a statement which, to say the least, went far to disprove the positive assertions of many persons for a year or two past, to the effect that the country was overstocked with teachers, and that the supply from the Normal School should be stopped. He was understood to say that 1,436 Provincial Licenses had been issued under the Common School Act, since 1871. There were at the present time about 1,200 holders of Provincial Licenses, either actually in the service or available. There were also about 200 persons teaching on Licenses issued under the Parish School Act. Add to these say 100 of the present student teachers at the Normal School, and we should have about 1,500 teachers available next November, to supply about 1,350 schools throughout the Province. This the Doctor thought only a reasonable proportion. He also asserted that in Ontario there were about six licensed teachers to every school, and in Nova Scotia, when the present Superintendent came into office, about ten persons holding license to teach for every school in the Province.

The number of student teachers in the Normal School at the commencement of the present session was 125. Of 140 candidates examined for admission, 74 were successful, 28 failed, 35 were taken on trial for a month, and 3 were admitted to the French Preparatory Department. Sixteen licensed teachers seeking advance of class made up the actual number enrolled.

An interesting part of the proceedings on the opening day was the presentation of the Lorne medal to the winner, Miss Freeman.

QUEBEC.

At the meeting of Convocation in McGill University, held on the 30th April last, degrees in arts were conferred, and the results of the sessional examination announced. The degree of Bachelor of Arts was conferred on the following gentlemen: *In Honors.*—1st Rank.—Harcourt J. Bull, Dugald Currie, J. Herbert Darey, Paul T. Lafleur, and Charles A Molson ; 2nd Rank.—James A. Craig, Thomas E. Cunningham, George F. Roberts. *Ordinary.*—In order of merit. McGill College. Class I.—Charles H. Keays ; Class II. —Charles Raynes, Archibald Ogilvie, Carrol E. Pillsbury, Charles W. Scriver, Frank A. Allen, Vitalier Larivier, George D. Bain ; Class III.—Andrew C. Muir, Robert A. Klock, James Bennet, and Walter D. Mercer. Morrin College.—Class I.—Henry Hemming ; Class III. —John Walker and James D. Ferguson. The degree of Master of Arts was conferred in course on the following gentlemen who had already taken the degree of Bachelor of Arts:—George B. Ward, B. A. ; Henry H. Lyman, B. A. ; Calvin E. Amaron, B.A., and George H. Forncret, B. A. The degree of Doctor of Laws was conferred in course on the following gentlemen who had already taken the degree of Master of Arts :—Sampson P. Robins, M. A. ; James D. Morrison, M.A. ; James McGregor, M. A. On the occasion of the *laureation* of the gentlemen named above, there were on the dais of the Molson Hall the Chancellor of the University, the Principal, and a large staff of Professors in academic robes appropriate to their several degrees, the Governor, etc., the whole presenting a very brilliant and imposing appearance, whilst the body of the hall was filled to its utmost capacity with the candidates for the different degrees, in their distinctive costumes, and with the friends of the students, and the supporters of the Universities. It must be very gratifying to the authorities and friends of McGill College to see how this Institution has grown from such small beginnings, and on the whole with so little pecuniary means, to its present prosperous condition ; with all the faculties in full operation, with an able staff of Professors in each ; with numerous medals and prizes to stimulate and encourage the students ; with Chairs of applied science and civil engineering, and withal a large attendance of youth, the hope of our new country, taking advantage of the great scholastic advantages which it offers, before the first half century of its existence has been completed. Dr. Murray, Professor of Mental Philosophy and Logic, delivered an able address to the young graduates, giving an account of the rise and meaning of the terms College and University, what was at first expected from the students of such Institutions, and what their *alma mater* now looks for from those who leave her learned halls crowned with honors and degrees.

Recent amendments to the Ontario laws with regard to Teachers' certificates and provincial land surveying have materially benefited McGill University. With regard to land surveyors, as the law previously stood, no Quebecker could obtain the right to practise as a land surveyor in Ontario without serving an apprenticeship of three years and passing preliminary and final examinations. Now, however, according to the Act just passed, "*Any person who has followed a regular course of study in all the branches of education required by law for final admission as a land surveyor, throughout the regular sessions of at least two years in any University of Ontario, or in McGill University in Montreal,* shall only require to be articled for twelve months' actual service before being granted the degree." The number of students attending the engineering classes in the University will likely increase greatly owing to the favourable provisions of this enactment. The other provision in regard to teachers, will be of great advantage to graduates of Quebec Universities, as it entitles them to first-class non-professional certificates in Ontario ; that is to say, certificates enabling the holders to take any position (such as Inspector, &c.) under the School Board, except that of professional teacher. The first of these amendments in favor of McGill students is due to the active exertions of Mr. D. McMaster, M.P.P.

The ninth annual meeting of the Ladies' Educational Association, Montreal, was held lately in the Synod Hall, Principal Dawson in the chair. The Reverend Principal Grant, of Queen's College, Kingston, opened the past session on October 2nd, with an address, and on the following Monday Dr. Johnston's course of ten lectures on astronomy was begun. Professor Moyse gave thereafter a course of lectures on "the great poets of the nineteenth century." During the sccond part of the session, lectures were given on "Domestic surgery and nursing." Dr. George M. Dawson gave a series of admirable lectures on "Physical Geographb." There was a large attendance of ladies at the lectures on each of these courses, and much interest manifested in them. The thanks of the Association were tendered to Dr. Johnston for the donation of $200, the lecture fee for his course in astronomy. The number of lady students enrolled for the past session is 108—the greatest yet on record. Of these 77 obtained one or more certificates, viz., first-class, 79 ; second-class, 49, and third-class, 14—142 in all. Twelve ladies had fulfilled the conditions necessary for the prize competition, the largest number who had yet done so, seven being previously the highest. To Miss Eva Dawson the "Physical Geography" prize was awarded ; and to Miss Agnes Hunter that of "Domestic surgery and nursing." The finances of the Association are in a satisfactory condition, the income exceeding the expenditure by $344.96.

The annual oral examinations of the Preparatory High School, Montreal, were held lately, and proved interesting and very satisfactory to the examiners, as well as to the parents of the pupils, and to all friends of the Institution present.

A meeting of the two Committees, the Roman Catholic and the Protestant, will be held in the Education Office, Quebec, on Tuesday, the 1st June, to take into consideration the new bill on Education for the Province of Quebec, proposed to be brought before the Provincial Legislature at its approaching session. It professes to be a bill to consolidate or codify the various existing acts respecting public instruction, but there are not a few new provisions introduced into its various sections. It is very lengthy, containing 722 paragraphs, some of them long, and others with not a few subdivisions. Its numerous provisions will require, and will doubtless receive careful consideration on the part of the members of both Committees, metioned above, of the Council of Public Instruction as well as of the friends of education in this Province.

MANITOBA.

At the recent annual meeting of the Selkirk Teachers' Association, the following officers were elected for the ensuing year, viz.:—

President,—Rev. W. Cyprian Pinkham.
First Vice-President,—J. B. Ferguson.
Second ditto. —Mrs. Chisholm.
Recording Secretary,—P. C. McIntyre.
Corresponding Secretary,—Geo. Munroe.
Treasurer,—Miss Wright.
Management Committee,—Miss Shore, W. A. McIntyre, Miss McIlroy, G. Bursell, and Miss Spencer.

Among other business transacted, the meeting adopted the following resolution, viz. :

That this Association, feeling the necessity of a suitable map of

Manitoba and the North-West Territories, for school purposes, respectfully ask the Board of Education of Manitoba to take such steps as will meet the want."

At the last quarterly meeting of the Protestant section of the Board of Education, Canon O'Meara moved, seconded by Col. Kennedy, the resolution of which he had given notice at the last meeting, and which is as follows: "That this Board is of opinion that some distinctively religious undenominational teaching is necessary in our schools, and that such teaching should form part of our system of instruction, and that a Committee of the Board be appointed to consider the best means of carrying into effect the above principle."

The Rev. J. Robertson, seconded by Mr. S. Mulvey, moved in amendment, "That in view of the fact that a Committee of the General Board, has been appointed to consider the matter of amendments to the School Act, and that important changes may be recommended owing to the Municipal Act having gone into operation, action in this matter be postponed until the amendments suggested by this Committee may be ascertained, and that in the meantime a committee be appointed to collect information in reference to the matter of religious instruction in schools, and to lay such information before the Protestant section of the Board for its guidance.

A division on the amendment was taken with the following result: Yeas—Rev. J. Robertson and S. Mulvey; Nays—Bishop of Rupert's Land and Canon O'Meara, the Rev. J. F. German, Col. Kennedy and the Superintendent.

The original motion was then carried on the same division.

The following Committee was then named to carry out the purport of the resolution, viz:—Canon O'Meara, Professor Hart, and Rev. J. F. German, with Col. Kennedy as a substitute, in the event of Mr. German's absence.

On motion of Mr. Robertson, seconded by Mr. Mulvey, a resolution was adopted, asking His Lordship the Bishop of Rupert's Land to nominate a Committee, with himself as Chairman, on text-books, and a number of books were referred to such Committee, with a view to their being placed on the authorized list.

The Board of Education have sanctioned plans and specifications for a fine brick veneer school-house, to be erected at Morris. This rising town had the honor of possessing the first brick school-house in the Province. That building is now much too small.

Some very good school-houses are being erected in various parts of the Province. Emerson and Selkirk both expect to have fine new buildings erected this year.

The authorities of St. John's College are advertising for a gentleman in mathematical honors who either is in orders or is a candidate for orders, to take Professor Baume's place, whose resignation takes effect at the end of the present term.

Professor Hart is an active member of the Board of Education and of the Council of the University of Manitoba.

PRINCE EDWARD ISLAND.

An Educational Association has been recently formed in Charlottetown, P.E.I. It is composed of teachers and others who are actively engaged in the cause of education, either as trustees or as general promoters. Its objects are, the mutual improvement of its members and the discussion of professional, literary, and educational subjects. The officers are: President—Dr. Montgomery, Chief Supt. of Education; 1st Vice-President—Dr. Leeming; 2nd Vice-President—Miss Emma Barr; Secretary—J. D. Seaman; Treasurer—R. E. Gaul, B.A.; General Business Committee—Dr. Leeming, P. R. Bowers, A. A. McKenzie, R. E. Gaul, and Thos. Mackinlay. At the first regular meeting the subject of "Corporal Punishment in Schools" was discussed. The subject was opened by Dr. Leeming. He was followed by P. R. Bowers, who read a very excellent paper on the subject. The following gentlemen addressed the association: Prof. Anderson, Hon. A. A. McDonald, Donald Cameron, M.P.P., Hon. A. B. McKenzie, M.L.C.

FOREIGN NOTES.

In 1859, at the Iowa Wesleyan University at Mt. Pleasant, Dr. Charles Elliott, as President, is said to have conferred the first degree of Bachelor of Arts ever bestowed upon a female graduate of a college in this or any other country.

England has four Universities; Scotland, four; France, fifteen; Germany, twenty-two; Russia, nine; and Spain, ten.

At a recent meeting of the Boston School Committee, it was stated that the result of a test made upon 14,946 school-going male children, was that about 4 per cent. were colour-blind, and out of 13,458 girls, only .06 per cent. were afflicted in the same manner.

The cost of elementary instruction in Prussia amounts to $3,100,000 annually; the sum being covered by eleven and a-half millions of marks from property and legacies, five and a-third millions from State subventions, and the balance from communal grants. Gratuitous instruction is given in seventeen out of the sixty towns in Prussia which count over 20,000 inhabitants.

There is only one country in the world in which there are no illiterate people; it is the Sandwich Islands. The population of the islands is 58,000. They have eleven high educational institutions, 169 middle public schools, and 43 private schools. The public instruction is under the supervision of a committee appointed by the King, and composed of five members, who serve without remuneration; the committee appoint a general inspector and a number of sub-inspectors. The Government takes care that every person shall be able at least to read and write, and pursues energetically all parents who neglect to send their children to school.

Madagascar has a Normal School, which was opened in October last, under the presidency of the Prime Minister. It is situated at Antananarivo, and is in connection with the London Missionary Society. According to recent reports there are in Madagascar 159 schools, with 9,375 children, supported by the Government, and in connection with the London Missionary Society 657 schools and 37,412 children. The Government teachers are trained in the Normal School.

The latest educational returns in Russia show that among the recruits for the Imperial army only 10 per cent. could read, and only 4 per cent. could write. The rest were perfectly ignorant—only about 5 per cent. being able either to read or write. The peasant women are so deplorably ignorant that not above one-half of one per cent. of them can read the Scriptures in the most imperfect fashion. They live in extreme poverty, and, in spite of all representations to the contrary, are kept down simply by the overawing force of the army. Among these peasants the leaven of Nihilism is spreading, and however much this may be deplored, it can be little wondered at.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

NORTH HASTINGS.—This Association met in Madoc on Thursday and Friday, May 13th and 14th. There was a large attendance of teachers, and the discussions were of the most practical nature, and could not fail to profit those who listened or took part in them. Mr. Mackintosh, I.P.S., President, took the chair, and the minutes of last meeting were read and approved. It was resolved that in order to make the library in connection with this Association more profitable, a catalogue of the books, with the amount of postage required for each, be printed, and a copy sent to each teacher. The subject of Geography was then introduced by Mr. Kirk, who gave many valuable hints as to the proper teaching of this important subject. A lively discussion followed, in which Messrs. Mulloy, Burrows, D. Johnston, J. Johnston and Mackintosh took part. *Afternoon Session*—Mr. Burrows, I.P.S., Lennox and Addington, gave some valuable "Hints to Young Teachers." He laid down the principle that the secret of good order is to keep the pupils busy. Mr. Sutherland then opened a discussion on written examinations, in which he was followed by Messrs. Shirk, Morton, Johnston, Burrows, McPhie, and Mackintosh. The unanimous feeling of the meeting being in favor of uniform promotion examinations, a committee was appointed to prepare sets of papers for the purpose. After a short intermission, Miss McDermid read an admirable paper on Geography to 2nd and 3rd classes. A vote of thanks was tendered her for her able essay. Mr. Mulloy was then called upon to introduce the subject of "Literature in Public Schools," which he did in a scholarly essay. Owing to the lateness of the hour the discussion on the subject was postponed till the following day. On Thursday evening, after the question drawer had been disposed of, Prof. Wright, of Albert College, delivered an interesting and instructive lecture on 'History in Public Schools." A hearty vote of thanks was given Prof. Wright for his address. Friday morning, after a short discussion on Literature, the following officers were elected for the ensuing year:—President, Mr. Mackintosh; Vice-President, Mr. Stirk; Secretary-Treasurer, Miss Riddell; Librarian, Mr. Kirk; Councillors, Messrs. Sutherland, Sharmon, Mulloy, Morton, Henderson, and Misses McDermid, Crepar and Breeze; Delegate to Provincial Association, Mr. Sutherland. After an essay on School Management by Miss Riddell, the subject of "Health in Public Schools" was taken up by Dr. Dafoe. A vote of

thanks was tendered Dr. Dafoe, and he was requested to allow the Association to publish his paper. Mr. D. Johnston, Cobourg, then read an excellent paper on Teaching, for which he received the thanks of the Association. Friday afternoon, the subject of Grammar was taken up, first by Miss Hornibrook, who read a well-written essay on Grammar to juniors, and afterwards by Mr. Johnston, I.P.S., South Hastings, who dealt with mistakes made in teaching Grammar to 4th and 5th Classes. A vote of thanks was given by the Association to the gentlemen who had so ably contributed to the success of the Convention, namely, Messrs. Burrows, J. Johnston, and D. Johnston. The following resolution was passed during the Convention:—"That in the opinion of this Association, the Provincial Association should be constituted as follows: 1st. Of delegates elected by each local association, one delegate being elected for every fifty paying members; 2nd. That in addition all persons engaged in any department of education should be eligible for membership; 3rd. That the right of discussion in the meetings of the Association should belong equally to all members; 4th. That to the delegated portion alone should belong the right of voting in the meetings of the Association.

JESSIE RIDDELL, *Secretary.*

COUNTY OF LANARK.—The Semi-Annual Meeting of the Teachers' Association for the County of Lanark was held in Almonte on Friday and Saturday, May 21st and 22nd. There were present more than ninety teachers. This being the regular business meeting, the election of officers was proceeded with. H. L. Slack, M.A., I.P.S., Co. of Lanark, was elected President; P. C. McGregor, M.A., Head Master High School, Almonte, Vice-President; H. Beer, Head Master Model School, Perth, Secretary-Treasurer. The following were elected a Committee of Management: Miss Todd, Mr. Raine, Mr. Moag, Mr. Hannah, Mr. J. P. Anderson. Mr. Michel and Mr. McCarter were appointed auditors of accounts. The instructive part of the proceedings consisted of a paper on the subject of writing by Mr. Devitt. This was a practical paper, and the teachers who were present cannot fail to be benefitted by the hints thrown out by this gentleman. He was followed by Mr. Berlinguette, who read a paper on "Want of Connection in Studies an Evil in Our Schools." This gentleman has had a large experience as a teacher, and his paper was listened to with great attention. Mr. J. McCarter, Head Master Public School, read a paper on History, which the Association asked his permission to have published in the CANADA SCHOOL JOURNAL. Mr. E. Anderton read a paper on the assigning of lessons, and in the discussion which followed it was apparent that a general opinion prevailed that our children were too heavily taxed with lessons, especially in our town and city schools. Mr. Hanna, of Lanark, gave an essay on the Prize System. He said prizes should only be awarded on the result of a carefully kept record of the session's work, and should be given for general proficiency. Mr. Raine gave a valuable paper on Grammar and how to teach it. J. A McCabe, M.A., Principal Ottawa Normal School, began the proceedings on Saturday morning by a practical lesson on teaching the important subject of reading. Mr. McCabe took lessons from the Fifth Book, and showed how to excite an interest in the subject. Mr. Lawe, of Almonte, followed with an essay on School Management. He deplored the unruly behaviour of our children generally, and a contrast between the behavior of children of forty or fifty years ago and those of the present time was made, much to the disadvantage of the present generation. Mr. J. P. Anderson then read an excellent paper on conducting examinations. This paper contained some new and original ideas, and was well received by the Association. The last subject was Algebra, which was very ably treated by F. L. Michell, M.A., Head Master Perth High School. Mr. Michell went to the blackboard and there solved a number of problems according to the most approved methods. This was work suitable chiefly for candidates for Third Class certificates. This closed the regular business of the Association. On Friday evening a public lecture was given by J. A. McCabe, M.A, on the cultivation of a taste for the beautiful, especially among children. This was a very instructive lecture, and was ably delivered by the lecturer, who kept the attention of his audience by a flow of language replete with poetic expression and beautiful imagery. The teachers separated on Saturday evening, feeling that their time had been well and profitably spent.

BRANT.—Friday and Saturday, June 4th and 5th, 1880. First day.—10.00 to 10.30 a.m.—Time-table for Rural Schools, Mr. M. Sipprell, Master No. 11, S. Dumfries; Critics - Messrs. John McLean and J. Patton. 10.45 to 11.15 a.m.—Geography to a Junior Class, Mr. J. D. Webster, Master No. 5, S. Dumfries; Critics—Mr. A. E. Kennedy and Miss Clarke. 11.30 to 12 a.m.—Music in Public Schools, Mr. J. M. White, Master No. 1, Brantford; Critics—Misses Purves and Knowles. 2.00 to 3.00 p.m. Factoring and Theory of Divisors, Mr. J. A. McLellan, LL.D., Senior Inspector of High Schools. 3.00 to 3 30 p.m.—Essay, Mr. J. W. Narraway, Master Cainsville School. Second day. 9.00 to 11.00 a.m. Business meetings of Committees. 10.00 to 10.30 a.m.—Geography to an Advanced Class, Mr. J. A. Dale, Master No. 7, Brantford; Critics—Messrs. Burke and J. Ross. 10.45 to 11.15 a.m.—Paper on Spelling, Miss Knowles, Central School; Critics—Messrs. Kelly and Akers 11.30 to 12.00 a.m.—Elementary Arithmetic, Mr. D. Reid, Master St George School; Critics—Messrs. Rothwell and Dale. 2.00 to 2.30 p.m.—English Literature, Mr. Morrison, Student B. C. I.; Critics—Messrs. Hodgson and Wilkinson 2.45 to 3.15 p.m.—Essay, Miss Mary Clarke, Teacher Coll. Inst., Brantford. 3.15 to 3.35 p.m.—Solutions of Equations, Mr. E. Bruce, Student B. C. I.; Critics—Messrs. Wm. Rothwell and A. E. Kennedy. I. An effort will be made to render all the exercises practical, and to conduct them with reference to the School Room. II. The Committee deemed it advisable to appoint critics in advance, that those appointed might be prepared to discuss the different subjects. III. On the evening of Friday, June 5th, a public meeting will be held in the hall of the B. C. I., when J. A. McLellan, LL.D., will deliver a Lecture. Addresses will also be delivered by other friends of education. Music by Glee Club.

M. J. KELLY, LL.B., *President.* W. ROTHWELL, *Secretary.*

OTTAWA.—Friday and Saturday, June 18 and 19, 1880. First day.—9.00 to 10.00.—Preliminary Business. 10.00 to 11.00 a.m.—Address, A Smirle, Esq., Vice-President. 11 00 to 12.00 a.m.—J. Thorburn, LL.D., Ottawa Colleg. Institute, "Names and Places." 2.00 to 3 30 p.m. J. A MacCabe, M.A., Prin. Normal School, Ottawa, "The Teaching of English Composition." 3 30 to 5.00 p.m.—Mr. R. J. Tanner, Cen. Sch. West, "Geography." Second day. 9.00 to 11.00 a.m. Mr. J. C. Glashan, Inspector Public Schools, Ottawa, "On Counting" 11.00 to 12.00 a.m.—Election of Officers. 2.00 to 4.00 p.m.—Mr. Smith Curtis, Central School East, "Orthœpy."

C. CAMPBELL, *Secretary.*

PRESCOTT.—The next session of the County of Prescott Teachers' Association will be held at Hawkesbury Village on Friday and Saturday the 4th and 5th. *Programme.*- Friday, 10-10½, Opening address: T. O. Steele, I. P. S., 10½-11½, Composition: J. A Houston, B.A., 11½-12½, Geography: H. Gray, H.M.M.S., 2-3, Grammar: T. O Steele, I. P. S., 3-3½, French Address: Rev. J. Routher, C.P., 3½-4½, General Business; 7½-8½, Public Lecture by J. Maxwell, B.A. Saturday, 10-11, Arithmetic: J. McCutcheon, H.M., H.P.S., 11-12, English Literature: T. O. Page, B.A., 2-3 Object Lessons: E. Robinson, O.M H.H.J., 3-4, Reading and spelling: Mrs Gray and others. N. B.—Fail not to attend.

H. GRAY, Secretary. T. A. STEELE, President.

LINCOLN.—*Programme.*—Friday, 10 a. m.—Election of officers, reception of Reports, and miscellaneous business. 11 a. m.—Discussion on Corporal Punishment in school—its necessity or otherwise, and the proper occasion and method of its infliction: Introduced by Mr. F. Davis, of Merriton. *Afternoon Session.*—1:30 p. m.—Merit Marks to Pupils—The expediency of using and the proper method of awarding them: Introduced by Mr. A. E. Moore, Jordan. 2:30 p. m.—Talking in school,—Should it be permitted? If so, to what extent? If not, how to repress it effectually: Introduced by Mr. Gray, Inspector of Schools, St. Catharines. 3:30 p. m.—Importance of Physical Culture,—The School Room the place for it: Practically illustrated by means of a class, by Miss L. Darche, of St. Catharines. 4 p. m.—Uniform and simultaneous Promotion Examinations for the county,—Their object and how they are conducted elsewhere, and the expediency of adopting them here: Introduced by Mr. Somerset, County Inspector. *Saturday Morning.*—9 a. m.—Teachers' Vacations; with special reference to the late modifications of the law respecting them: Introduced by Mr. Jacob Hipple, of Campden. 9:30 a. m.—Industrial Drawing, as a means of Training and Culture, with illustrative lessons to a class: by Miss L. F. Gross, of St. Catharines. 10 a. m.—Teaching History; A few common mistakes and how to rectify them; to what extent should the text-book be depended upon? With class illustration, by Mr. W. F. Rittenhouse, of St. Catharines. 11 a m.—Address by Professor Bell, on the Teaching of Reading to children, with special reference to the work of our Public Schools. *Afternoon Session.*—1:30 p. m.- Object Lessons—their importance in developing the thinking and observing faculties of children; with illustrative lessons by Miss M. A. Snively, of St. Catharines. 2 p. m.—Algebra Lessons suitable for students for Second and Third-class certificates: By Mr. W. J. Robertson, of the Collegiate Institute, St. Catharines. 3, p. m.—The teaching of English Literature: Mr. Seath, Head Master of the St Catharines Collegiate Institute *Evening Entertainment.*—Professor David Charles Bell, of Brantford, will give a "Literary Evening" on Friday, in the City Hall, consisting of selected Reading from various authors.

J. B. SOMERSET, President. W. F. RITTENHOUSE, Secretary.

WENTWORTH.—Friday and Saturday, May 14th and 15th. *Programme.*—Friday, May 14th.—10.00 to 11.00 a.m.—Routine business. 11.00 to 12 00 a.m.—School Discipline. 1.30 to 2.00 p.m.—Question Drawer, English, T. C. L. Armstrong, M. A. 2.00 to 2.30 p.m.—Question Drawer, Mathematics, W. H. Ballard, M. A. 2.30 to 3.30 p.m.—Address, J. M. Buchan, M. A. 3 30 to 4.00 p.m.—"Arithmetic Begun," G. W Johnston. Evening Session—(at 8 o'clock)—Prof. D. C. Bell. Saturday, May 15th. 9.00 to 10.00 a.m.—Penmanship, N. Stilwell. 10.00 to 11.00 a.m.—Physical Geography, Dr. Hare. 11.00 to 12 00 a.m.—School Amusements, Jas. Herald, M.A. J. H. SMITH, *P. S. Inspector* GEO. DICKSON, M.A., *President.*

Readings and Recitations.

THE SCHOOLMASTER TO HIS PUPIL.

CONSEQUENCES.

The following is taken from a book entitled "The English School Master," bearing the date 1680. It is a very quaint old book, written by a famous English schoolmaster, Edward Coote:

My child and scholar, take good heed,
unto the words that here are set,
And see thou do accordingly,
or else be sure thou shalt be beat.

First, I command thee God to serve,
then, to thy parents, duty yield;
Unto all men be courteous
and mannerly, in town and field.

Your cloths unbuttoned do not keep,
let not your hose ungartered be,
Have handkerchief in readiness,
wash hands and face, or see not me.

Lose not your books, ink-horns, or pens,
nor girdle, garters, hat, or band,
Let shoes be tied, pin shirt-band close,
keep well your hands at any hand.

If broken-hosed or shoed you go,
or slovenly in your array,
Without a girdle or untrust,
then you and I must have a fray.

If that thou cry or talk aloud,
or books do read, or strike with knife,
Or laugh, or play unlawfully,
then you and I must be at strife.

If that you curse, miscall, or swear,
if that you pick, filch, steal, or lye;
If you forget a scholar's part,
then must you sure your points untye.

If that to school you do not go,
when time doth call you to the same;
Or if you loiter in the streets,
when we do meet then look for blame.

Wherefore, my child, behave thyself,
so decently in all assays,
That thou may'st purchase parents' love,
and eke obtain thy master's praise.

EDUCATION FOR GUIDANCE.

What shall we say of a system of education which throws its students into society unable to protect themselves from the grossest impostures? To what end is a community filled with colleges, high schools, and common schools, upon which millions of dollars are spent, when its graduates go out to become the ready prey of charlatans and sharpers, who can enrich themselves by pushing the most absurd and preposterous projects?

We are led to these reflections by the last curious report of lightning-rod swindles. The proud State that gives us our President and Chief Justice, and makes a great ado about its education, has also the honor of originating and harboring "Chambers's National Lightning Protection Company" of Cincinnati. The Americans are a progressive people, great on improvements, and the Westerners are specially wide-awake in this respect. So the new lightning-rod is a great step forward in inventive science. It is laid flat upon the ridge of the building, and turned up at the two ends, and has no connection with the ground. Its *rationale* seems to be that the lightning-discharge is caught upon one of the points, and, there being no rod to convey it to the earth, it is obliged to "diffuse back into the air, where it belongs and whence it came." Of course, such an arrangement is worthless for protection, and is, moreover, absolutely dangerous, as every intelligent schoolboy ought to know; and yet such is the grossness of public stupidity that the company drove a thriving business with their contrivance, mounting it upon a great number of private dwellings, and even upon school buildings. Professor Macomber, of the Agricultural College at Ames, Iowa, seeing the extent to which people were humbugged by this so-called "Protector," publicly denounced it as a fraud, whereupon he was prosecuted by the company, which laid its damages at $50,000.—*Prof. E. L. Youmans, in Popular Science Monthly for February.*

IMPORTANT FACTS CONCERNING COMPULSORY EDUCATION AND ILLITERACY.—State Superintendent Smart recently answered the following questions through the Indianapolis *Daily Journal*:—

1. What nations have now in force a compulsory education law?
2. What per cent. of the population of each nation can read and write?
3. What per cent. of the population of the United States can read and write?
4. Have any of the States had such a law, and what ones?

The nations having compulsory educational laws are as follows: Prussia, since 1732; all the German States, before 1810; Austria, in a modified form, for a hundred years; the Scandinavian Government and Denmark, since 1814; Greece, since 1834; all the cantons of Switzerland except Geneva; Turkey since 1869, but the laws have not been enforced; Italy since 1871; Spain and Portugal, but the laws are not enforced. The school boards of England have had the power to compel attendance since 1871, and the cities of Liverpool, Manchester, Oxford and many other towns have compulsory laws.

2. The per cent, of population of different nations that can read and write is as follows, viz.: Switzerland, 100; Denmark, 100; Sweden, 100; Norway, 100; Japan, 90; Germany, 88; United States, 80; Belgium, 70; England, 67; France, 67; Austria, 51 China, 50; Italy, 27; Spain, 20; Greece, 18; Argentine Republic, 17; Russia, 09; Poland, 09; Mexico, 07; India, 05.

3. Per cent. of population of the United States that can read and write, 80.

4. Names of States that have had compulsory educational laws are as follows, viz.: Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Michigan, Nevada, California, Texas.

In most, if not all, of these States the law is practically inoperative.

PRONUNCIATION *vs.* SPELLING.—A copy of Webster's Unabridged Dictionary was offered at a teachers' institute in Pennsylvania to any teacher who would read the following paragraph and pronounce every word correctly, according to Webster. No one succeeded in earning the dictionary, although nine teachers made the attempt: "A sacrilegious son of Belial, who suffered from bronchitis, having exhausted his finances, in order to make good the deficit, resolved to ally himself to a comely, lenient, and docile young lady of the Malay or Caucasian race. He accordingly purchased a calliope and a coral necklace of a chameleon hue, and securing a suite of rooms at a principal hotel, he engaged the head waiter as his coadjutor. He then despatched a letter of the most unexceptional caligraphy extant, inviting the young lady to a matinee. She revolted at the idea, refused to consider herself sacrificeable to his desires, and sent a polite note of refusal; on receiving which, he procured a carbine and bowie knife, said that he would not forge fetters hymeneal with the queen, went to an isolated spot, severed his jugular vein, and discharged the contents of his carbine into his abdomen. The debris was removed by the coroner."

Dream of the Past,
'Tis joy unspeakable thus now, as then,
To see those visions, though they may not last—
May never come again.

Still are they mine—
Not of the earth, all earthly and unblest;
Their home within my heart, my soul the shrine
Where they so calmly rest! *Lyle.*

Publishers' Department.

The following is a sample of numerous letters received from various parts of the United States regarding Mr. Hughes' work, "Mistakes in Teaching:"

MESSRS. GAGE & Co.

Gentlemen,—The book sent me by your house fully confirms the statement made by the Hon. W. D. Henkle, of Ohio. It really is "a happy hit," and in reading its pages I was reminded of many a blunder that took place in my early experience. I think he who makes himself intimately acquainted with the contents of "Mistakes in Teaching" is sure to succeed, provided he makes and holds a thorough acquaintance with the details of school work. Noticed advertisement of CANADA SCHOOL JOURNAL in said book; would thank you for a sample copy.

I remain, yours truly,
H. LENICH MEYER (Teacher),
Kutztown, Pa.

Messrs. Carter, Dinsmore & Co., Boston and New York, Manufacturers of Carter's Writing Fluids, Inks and Mucilages, received the "First Award," the highest given, at the International Exhibition just closed at Sydney, Australia.

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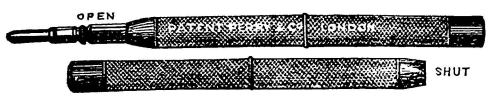

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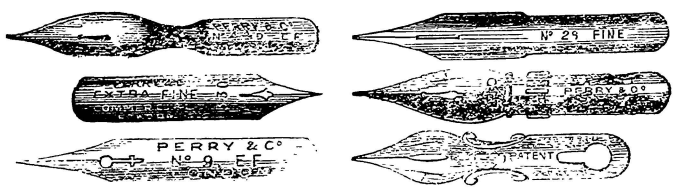

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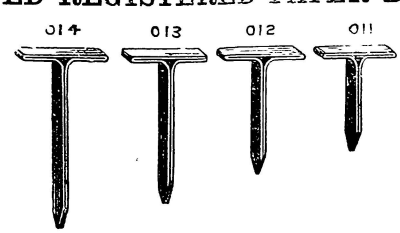

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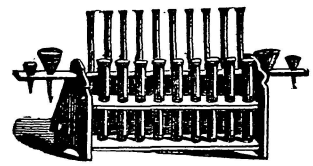

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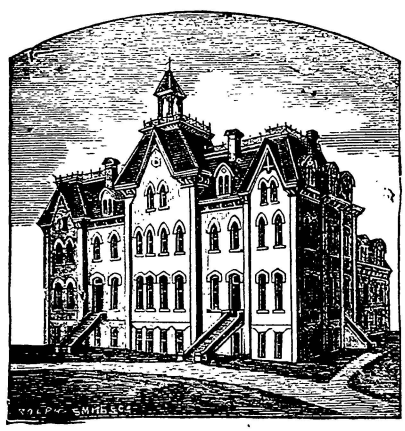

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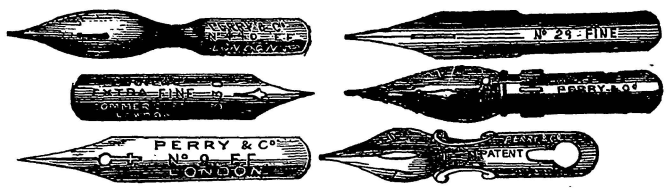

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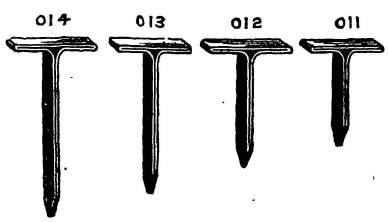

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The Canada School Journal.

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JAMES H. HOOSE, A.M., Ph.D.

The development of the system of Normal Schools in the United States of America has brought to the public notice several educators of remarkable powers. This work of foundation and nurture demands those peculiar characteristics with which few are gifted. Among the best known workers in this department of education is Dr. James H. Hoose, the present Principal of the State Normal and Training School in Cortland, New York. He was born in Schobarie County, New York, in 1835, but early removed to Oswego County, where he received his early education and collegiate preparatory training. He graduated in Genesee College, Lima, N.Y., in 1861. He received the degree of Doctor of Philosophy from Syracuse University, of which institution he is a trustee.

Dr. Hoose has been a teacher from the age of eighteen. At this early age he manifested those qualities of mind and heart which thoroughly fit the man for a successful educator. He showed a most ardent enthusiasm in holding Institutes, and in studying and expounding those principles which must underlie all correct school government. Using all diligence to place himself in the way of the best possible advantages for the study and observation of school methods, his superiority became so marked that he early acted as instructor at County Institutes, and in 1866 he was employed by the Superintendent of Public Instruction, Hon. Victor M. Rice, to conduct Teachers' Institutes in various Counties of the State. His good fortune in enjoying the invigorating and exact training of those rare educators, Jno. R. French, LL.D., and James L. Alverson, LL.D., was most fully appreciated and carefully improved. To the association with these men was he largely indebted for that power of lucid and thorough exposition which made him so valuable a helper to the younger members of the profession.

While Dr. Hoose has honorably filled various positions in Academies and Seminaries, his tastes and sympathies have ever been more heartily enlisted in the public school system of the State, and his best energies have been directed to the cause of training teachers for these public positions. As Professor of Theory and Practice of Teaching, and of English Language and Literature, in the State Normal School at Brockport, N.Y., he showed that rare ability for organization and government, as well as that untiring energy of purpose, which resulted in his election to the Principalship of the State Normal School at Cortland, N.Y., at the time of its foundation, in 1869. Under his able superintendency this school has been placed in the very front rank of similar institutions in the United States. He has also been thoroughly identified with the general educational interests of the State, and has been a most active force in all movements for the unification of the school system. In 1871 he was elected President of the New York State Teachers' Association, a position which he filled with great acceptance to that highly influential body. In 1877 he travelled in Europe, where he studied especially the school systems of England and Scotland—embodying the results in "Notes on the Public School System of England and Scotland."

For several years past Dr. Hoose has been very earnest in efforts to raise the public school management of his native State out of the complications of partizan politics, and place it on a solid foundation of principles. As Chairman of the Committee on Correspondence appointed by the "New York State Association of School Commissioners and Superintendents," in 1879, he has made an able and exhaustive report on this subject, in which he strongly advocates the unification of the entire public school system, under the control of one central Board, which should be as far as possible removed from factitious and partizan influences. Largely through his influence was organized, in 1879, the "International Society for Investigating and Promoting the Science of Teaching," of which he is now President. He has written a large number of pamphlets and addresses on educational topics, and is the author of "Studies in Articulation" and "On the Province of Methods of Teaching." These treatises have been widely and favorably known among the profession.

Dr. Hoose is a man of one aim. While he is in hearty sympathy with questions of current interest in Church and State, and is well informed on many subjects, his one work is that of an educator, and of a student of educational philosophy. He strongly believes that teaching should be elevated to the dignity of a profession. The energies of his nature and the activities of his life are directed towards the realization of this end. His absorbing ambition seems to be to make the Normal School, of which he is Principal, an abiding blessing to the commonwealth. He is a man of genial nature, but of strong and deep convictions. His immense will power is steadied by a sound judgment, and controlled by a healthy conscience and by firm Christian principle. He is already widely known as a highly successful educator and author, and seems destined to take a foremost rank among the members of his profession.

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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1878.
Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction, Quebec.
Recommended by Chief Superintendent of Education, New Brunswick.
Recommended by Chief Superintendent of Education, Nova Scotia.
Recommended by Chief Superintendent of Education, British Columbia.
Recommended by Chief Superintendent of Education, Manitoba.

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

TORONTO, JULY, 1880.

—Special attention is directed to the Report of the Syndicate appointed by Cambridge University to consider the "Greek Question," and the opinions of the leading teachers of England upon the subject, which appear in another column. They form a mine of golden thought and ripe experience in relation to this question. We owe a debt of gratitude to the veteran educator, Robert Potts, M.A., for sending them to us.

SOURCES OF CANADIAN HISTORY.

It will be in the recollection of many of our readers that the study of Canadian History in our schools, even in its most elementary form, does not date back more than about twenty years. And, as a matter of fact, there are yet some schools in the Dominion, of more or less pretensions, in which every other history is taught but that of Canada. In such schools it is considered desirable that the pupils should know something of Ancient and English history, but nothing whatever of the history of their own country! This, of course, is a matter of taste. Formerly there was a sufficient excuse for this omission, as teachers were either destitute of manuals to aid them on the subject, or were dependent on the most meagre sources of information for materials on which to base their instruction. By degrees, however, this source of information has been enlarged; and thanks are due to Mr. John Lovell, of Montreal, who (in addition to comprehensive manuals on the subject which he had published) placed, some years since, within the reach of teachers, "Garneau's History of Canada, translated by Andrew Bell, and issued in three volumes. Christie's "History of Lower Canada" also supplied a want. Warburton's "Hochelaga," it is true, furnished a graphic sketch of the early incidents of our history; and the "Transactions of the Quebec Historical," as well as Lemoin's "Maple Leaves," contained most interesting episodes of the history of early Colonial times—chiefly French. The *Relations des Jesuites*, and the "Documentary History of the State of New York" also contained a mine of historical wealth, but the labor of exploration in such a field deterred the vast majority of teachers from attempting it. Later on, our Colonial literature was enriched by the publication of the eloquent and romantic sketches of periods of early colonial history, by Francis Parkman. We have thus characterized these sketches of periods of our history—which are in themselves so full of stirring incident—and yet they are written by Parkman generally in sober language. The very nature of the task imposed upon this writer necessarily involved a spirited treatment of some of the subjects in his histories. Many of the incidents are, of themselves, both touching and romantic. They also involve the narration of details, showing, in most cases, great enterprise and resolution, or intense privation and prolonged endurance, as well as death in varied forms, not excluding martyrdom itself. With such material, and in such hands, it was not surprising that Parkman's successive volumes attracted a more than ordinary share of attention on the part of those interested in our early history. They are invaluable to the teacher and student as sources of authentic information on the periods treated.

After all, however, these works must be regarded as chiefly fragmentray. They deal only either with local or specific departments of our history, and do not touch, except incidentally, the primal sources or springs of our origin and growth as a people. This "missing link" has, however, been most opportunely and most satisfactorily supplied by the issue of two elaborate volumes from the press by the Rev. Dr. Ryerson—so justly noted as one of the most able and successful writers which the Dominion has yet produced. This work, entitled "The Loyalists of America and their Times, from 1620 to 1816," enters into an exhaustive discussion of "the causes and consequences" of the two-fold settlement of New England by the Pilgrims of New Plymouth, and the Puritans of Massachusetts Bay. These two settlements were united into one after a separate existence of seventy years, under a charter from William and Mary in 1690. The venerable writer analyses, with a steady and skilful hand, the growth of the mixed principles which governed the New Englanders in their relations to Old England and the other Colonies in America. Never were the disguises of professed friendship and hypocrisy of the actors in these times more fully understood and exposed. These elucidations furnish a clue to some of the misunderstandings and mystifications of the times. They expose the hollowness of some of the professions made to justify the resort to arms in support of the rights of the subject, and in the interests of free government. The unparalleled cruelty in the treatment and expatriation of the vanquished loyalists exhibits, in the strongest light, the utter hollowness of these professions, which, as if to add to the solemn mockery of their utterance under the circumstances, were duly enshrined in the famous "Declaration of Independence." It is true that this noted document was written by a philosophical infidel, and not by the immediate actors in the cruel tragedy of despoiling and ruining the loyalists, and then banishing them, but it was, nevertheless, hailed by them as a convenient shield, under the respectable ægis of which they could the more securely and effectually carry out their cruel and heartless designs towards the defeated and utterly defenceless loyalists. But we shall not anticipate. These admirable volumes will amply repay readers

for their perusal. They will prove a mine of wealth to teachers and others, especially those parts of the work which deal specifically with the actual settlement of these provinces by the now historically famous United Empire Loyalists of Canada.

HOME WORK OF SCHOOL CHILDREN.

When so much is written on this subject by theorists and would-be reformers, it is a treat to read the following sensible views of the case, which are taken from the *Scotsman* and *The Schoolmaster*:

As regards elementary school children, the case is by no means so clear, more especially in England, where the amount of home work exacted from the children is, as a rule, much less than it is in Scotland. It is easy to talk about the Code; but it is certain that if the Code made no demand, and if teachers and scholars were left to manage matters at their will, the outcry would be much greater than it is at present against the abuses of the public school system. More elasticity may be desirable; but the difficulty is to admit elasticity and to keep the door shut against the numerous evils that would almost certainly seek for admission along with it. A system which is applied to thousands of schools and to millions of children, and which involves the expenditure of millions of the public money, must be administered both with strictness and with a certain degree of uniformity. The truth which it is most likely to violate is the elementary one, that all minds are not cast in the same mould, and do not reach the same degree of development at the same age or in the same time. The pinch of the present rule is no doubt felt most in connection—not with the individual examination of scholars; that is both right and necessary; but—with the individual payments which make up the grant. Perhaps the best and fairest way to remove this objection would be to adopt the plan previously suggested here—to examine the scholars individually as at present, but to make the payments depend on the average attainments of each class or standard. At the same time, it cannot be denied, and should not be concealed, that much if not most of the cerebral disorder or weakness ascribed to the Code is really due to the neglect of parents. The root of the evil is physical, not mental. If children were properly fed and fitly clothed, if they dwelt in well-sized and cleanly houses, they would be able to stand all the work the Code puts upon them, and even more, without injury either to body or to mind.

The loudest outcry, however, has come from the middle-class schools, and chiefly from middle-class schools for girls. It is not difficult to understand why this should be so. It is on the middle class that the pressure of education, as distinguished from educational pressure in the most objectionable sense, is greatest. With the members of that class education is now more than ever the passport to success in life. Every man who wishes to get on in the world must have at least a fair education; and now, it must be added, every woman who wishes to lead a useful and independent life must be educated. This does not necessarily imply oppressive or injurious brain-work, but it opens the way for it; and competition is now so great, and ambition so active, that the way thus opened is too often trodden. The peculiarity of middle-class education, which makes it specially liable to abuse in this respect, is the number of subjects which it is made to include. It is not uncommon to find boys of fifteen learning four languages beside their own, and girls of the same age learning three foreign languages, besides history, mathematics, music, and any number of occasional arts and sciences. Clearly this is putting too much work on the machine for good work to be done, or for the machine to remain unimpaired. And the more complete the organization of the school, the greater the pressure. In a well-organized school, every department has its separate teacher. Every teacher thinks his own subject the most important, and he gives to his pupils an amount of work which has no reference to the similar demands of his colleagues at the same time. It should be the duty of a head master or a head mistress to regulate the working of the whole school; but these persons generally have their own classes and subjects to look after, and, instead of restraining others, they sin themselves. Here, too, as in the elementary school, peculiarities and differences of power are not sufficiently regarded. Each mind is treated as if it had been cast in the same mould as every other, and the same amount and kind of work are expected from the weak as from the strong. Then, it must be said, we fear, that the habit is growing of casting the real hard work of learning and teaching on the home hours, which should be given to relaxation and to the recovery of tone lost at school. The scholars have to work double ties. They have their night shift as well as their day shift, and the night shift is generally the harder of the two. This is to make life a weariness to them, and home anything but a pleasant place. It cannot be understood too soon or too well, that teaching does not consist in listening to a recital of tasks previously conned with much labour—not in taking things out of the mouths of scholars, but in putting things into their heads—and that teaching in this sense ought to be done by the teacher in school hours. It is done in every well-conducted school, and by every teacher who takes a real interest in his work: and happily there are many such. But there are also some schools and some teachers of whom as much cannot be said, and it is in connection with them that educational pressure is really felt, and is doing real harm. Parental pressure ought to be sufficient to counteract the evil.

Public attention has not been withdrawn from the subject of brain-pressure in educational matters. Mrs. Garrett-Anderson delivered a lecture to the members of the Social Science Association, in which she dealt chiefly with the question as it affected the best secondary schools for girls. After discussing the medical aspects of the matter, and the division of responsibility which lay between mother and mistress, the lecturer made the following suggestions:—(1) To get the elements of knowledge well and thoroughly taught at an early age, and not to urge the child to make up for early neglect by taking a very extensive range of subjects as soon as she goes to a good school; (2) to accept two and a half or three hours of class as long enough at one time for almost all children, and to provide two or three short intervals of rest—*e. g.*, five minutes or ten minutes in each hour—during even this time; (3) to insist upon every girls' school having a playground; (4) to aim at greatly reducing the amount of writing in the home work; (5) to reduce the number of examinations, and especially to make them as unstimulating as possible, and to apply them with great reserve to the children most likely to shine in them; and (6) not to aim at completing the education by the age of eighteen. The main purpose of Girton and Newnham Colleges was to encourage young women to continue their education in an organized manner after they cease to need the restraints imposed upon school-girls, and the existence of these colleges rendered it more than ever unnecessary to attempt to teach girls everything they ought to know in early adolescence. These suggestions are all sensible and to the point. Any blame as to the matter of over-pressure must be placed to the account of the parents, the public as a whole, and the demands under the various examination schemes of the period. If the parents require their children to pass a given ordeal, the teacher must do her best to secure success. Credit is at stake, and competition acts as a spur to excitement in the race of both teachers and taught. Some of the suggestions which have been made by Mrs. Garrett-Anderson are applicable to all schools, and none know that fact better than teachers themselves. It is a good thing that the public have apparently become interested in this subject on their own account. It is well to work hard and steadily, for Mr. Fitch's experience will be that of others. In the course of the discussion he declared that, as the result of his experience, he had found the greatest amount of health, cheerfulness, and happiness existing among pupils in schools where the intellectual aim and the instruction given were the highest. That may be quite true, where examinations are not superadded in excess, and where an unhealthy stimulus is not applied in vain searching after too great a degree of excellence. Educational work will ever continue to do less harm than educational worry.

Contributions and Correspondence.

GENERAL REMARKS AND SUGGESTIONS.

BY H. L. SLACK, M.A., PUBLIC SCHOOL INSPECTOR, LANARK CO.

I.—TO TRUSTEES.

The law clearly defines your *Duties* and your *Powers*, which you will find fully set forth in the "Compendium"—pages 46 to 52—and in the Departmental Regulations, 152-158. There are, how-

ever, some points to which, from my experience, I feel that your particular attention should be directed :

(1) At the commencement of each year, and at as early a date as possible, you should meet for the purpose of organization. Appoint your Chairman and Secretary-Treasurer, and one of your number, either the latter official or some other member of the corporation, whose duty it shall be to keep the school-house in good repair ; to see that the windows are properly filled with glass ; that the school is comfortably heated ; that the black-boards are in good repair ; that the maps and other school apparatus are well kept ; that the supply of water is abundant ; that the outhouses are in a proper condition ; and that everything is so ordered and arranged as to conduce to the convenience and comfort of both teacher and children. Such matters of detail do not require to be brought up at a Trustee meeting before action is taken ; but acted on, as necessity requires, by one member duly appointed for the purpose, or by each trustee in rotation. It is by no means uncommon to find the furnishing of a broom or a tin-cup deferred until a Trustee meeting is called to consider the matter—and recently my attention was drawn to a notice calling a meeting of the ratepayers in a certain school section to debate the question of a new door which had for some time been off its hinges.

(2) Unless power has been given to any one Trustee to act in matters of detail, as above specified, never transact any business except at a meeting duly called and organized, and of the time and place of which every member has been notified.

(3) Enter a full account of all your proceedings in your Minute-book, and keep a strict account, in detail, of all school moneys received and disbursed, closing your books and striking a balance at the end of each year. This statement should be duly audited before the annual meeting and entered in the "Financial Statement" in the "Annual Report," according to the classification of items there set forth. With reference to this the following clause appears in the "Public Schools Amended Act, 1880," viz. : "The Trustees of every rural school section and the Public School Board of every town, village or township shall keep, or cause to be kept, books of account of all school moneys of their section, town, village or township (as the case may be), according to such form as may be prescribed by the Minister of Education."

(4) It is your duty to arrange for the payment of salaries of teachers at least quarterly; and if you have not sufficient funds for the purpose in the treasury, the law gives you power to borrow what you require until the taxes can be collected. This you are to do by promissory note, given under the seal of the school corporation, to be discounted at a rate of interest not exceeding eight per cent. per annum.

(5) In the engagement of a new teacher you should carefully examine the certificate, not simply to satisfy yourselves that it is valid for the full term of the engagement, but also to ascertain its general character, and the *teaching capacity* that it indicates. Remember that there is a vast difference in 3rd Class Certificates. Those that have been granted after attendance at the Model School are all rated from *First* to *Sixth* rate, and if you will only take the trouble to examine them, a great deal of dissatisfaction may be avoided.

(6) You are particularly requested to examine carefully the Half-Yearly and Annual Returns before transmitting them to the Inspector, and to see that they are forwarded in the proper time. Many returns come to me with errors and omissions which, to say the least, are an evidence of gross carelessness and neglect.

(7) You should make provision, especially in the winter season, for the opening and warming of the schools, so that the exercises of the day may be commenced promptly at 9 o'clock a.m. At stated seasons you should see that the school house is properly cleaned. These particulars do not form any part of the Teacher's duties.

(8) You are to bear in mind that you have no legal right to allow the school-house to be used for any other than school purposes. Even a majority of the ratepayers cannot so sanction its use ; nor yet is any special clause in the deeds of any binding effect on you or the section.

(9) You must bear in mind that every Trustee signing a false return—as well as every Teacher keeping a false Register—renders himself liable to a fine of twenty dollars.

II.—TEACHERS.

Your specific duties are also clearly defined in the school law—see compendium, pages 74-78 and 177-182—but I would here make the following suggestions :

(1) Present your certificate to the Trustees before signing your engagement, and do not enter upon your work under any false pretences.

(2) Make yourself the master of your situation from the very outset, and discipline your school by a judicious combination of firmness and kind consideration. If corporal punishment is inflicted, let it not be rashly meted out, nor for every trivial offence; but administered in such a way as will conduce to the well-being, not only of the individual culprit, but of the whole school. It is a sign of weakness in the governing power of a teacher, to have to be perpetually resorting to punishment of any kind. If you find that you must do it, allow me to remind you that you have missed your calling, and for your own peace of mind, as well as for the good of your charge, seek some other employment.

(3) Keep your Daily and General Register, your Class-book, Visitors' Book, and all school records, both accurately and neatly, and see that they and all your Returns will always bear close inspection. Many of them have not been in such a condition in the past.

(4) Be an example of order and neatness to your pupils, and never neglect to cultivate such habits in them. Teach them to be civil to those with whom they may come in contact. In these days you should watch, with unremitting care, the growth of that independent spirit, far too common, of setting aside lawful authority, and of each one doing just as he thinks best. Nip such a spirit in the bud—do not allow it to develop. It is hard to say where it will end. In the "Educational Notes" of one of our leading Provincial dailies, I have just read, "The St. Louis School Board has added oral lessons in *etiquette* (or manners) to the curriculum of the schools of that city." If "*manners*" are not on the programme, it is most certainly not too much to expect of any teacher to have a mannerly school. Space will not allow me to do any more than mention the subject here. If you desire to discharge your very urgent duty in this respect, you will find abundant opportunity.

(5) Read educational works and subscribe to a School Journal. You want all the information and assistance you can get in the discharge of your arduous duties. I cannot see how a teacher can keep up to the times and satisfy himself without these aids in his profession.

(6) As co-operation is an absolute necessity for your welfare and success, in addition to securing it on the part of your pupils, cultivate it in the section at large. By the system of reports, and by constant visiting among the different families of the section, demonstrate that the interests of parents, pupils and teachers are identical—that there must be a strong bond of sympathy between them—or else your labors are to a great extent in vain.

(7) Finally, do your work as if you feel its responsibility, and not merely because it furnishes you a means of earning your daily bread.

III.—PARENTS.

I would not wish to close my suggestions without reminding you that you play no unimportant part in the welfare and ultimate success of our public school system. We cannot for a moment doubt that you are interested in it—that you must be interested in the education, in all its aspects, of those, your own children, for whom you are responsible. You can do a good deal to help the teacher in his work. *Irregular attendance* is one of the most common complaints. Do you always send your children to school as regularly as you can? Are you not aware of the evil influence you must exercise, not only on the individual, but on the school, by keeping them at home, often for trivial reasons? You complain of the slow progress your child is making. Are you sure that you have not something to do with it? Do you always provide the necessary books, slates, pencils, &c. ? Do you endeavor, by all the means in your power, to strengthen the hands of your teacher, to encourage him in his work; or are you ready to listen to tales brought home, or to gossip circulated in the neighborhood, perhaps without the slightest foundation, and, at any rate, exaggerated as they go their rounds, until the usefulness of the teacher is well-nigh gone? These questions may well be put to many parents among us. Teachers are not immaculate ; they have their failings ; but I am bound to say that it would be hard to find a class of individuals whose self-denying labors are so often either not appreciated, or misrepresented, and whose little failings are so magnified. Co-operation—hearty and genuine—between teachers, parents, trustees, pupils and all, is what we want, and, with all our other advantages, *success* must be our reward.—*Annual Report, 1879.*

"CLEANLINESS AND ORDER."

BY W. F. MOORE, NOBLETON.

(Published by request of the North York Teachers' Association.)

CLEANLINESS.—Some poet, Tennyson I think, says "we are part of all we have ever met;" and although this may not be flattering to us in many respects, yet it is generally true. If our company be refined, we unwittingly, it may be, follow their example; if ignorant, we naturally adopt their style; and if cleanly, we necessarily will make the change. Therefore we should give particular attention to the grounds around the school-room; keep them as neat as possible: fences up, gate on its hinges, trees planted and trimmed, pump, with tight sloping platform; scrapers at the door, room carefully swept in the evening—dusted in the morning, windows clean and properly glazed. Every pupil should be held responsible during the day for papers on the floor, or anything of that kind around his or her seat.

Having these matters attended to, then, as "example is better than precept," let the teacher be scrupulous in his own person and clothing. It will be useless to practise one thing and teach another. A beard of a week's growth will give the boys and girls a license for uncombed hair; dust on the teacher's boots will justify mud on the boys'. These matters clearly belong to the teacher, and if they are attended to, he may, with a clear conscience, pay attention to the appearance of the pupils.

I know there is a delicacy on the part of teachers in speaking to the pupils personally. I would overcome this by giving a short weekly lesson on Hygiene, in which this matter may be dealt with generally. Aside from the effect on the school, I think this lesson is an important part of the instruction imparted by the teacher. Do not allow the habit of spitting on the slate, and then using the hand to rub out the marks; insist on slate cloths—insist on the use of pocket handkerchiefs.

But there will be some pupils moulded on the same pattern as "Dirty Tim," and speak as you may, set the most correct example possible, yet they will be untidy and unclean. Tom will come with a band of faded crape fitting tightly to his chin and neck. Harry will have gauntlets fitting closely to his hands. A good plan to correct this, is to send Tom's sister or Harry's brother with him to the pump, to give that neck a good scouring or Harry's hands a good scrubbing. If the thermometer ranges one or two degrees below zero, it is not probable the operation will need to be repeated, and further, you may depend on the matter being repeated to Mamma at home.

Again, in the class, I would make it a duty, at times, to look at the pupils narrowly. Have them hold their hands out, and let them be inspected. In nearly all cases this will prove effectual. If there are still a few stubborn ones, speak to them privately, and see their parents, but, in all cases, secure the desired end.

ORDER.—Again, I would pay attention to all external matters. Have no creaking doors—put oil on them; no shaking windows—have them fastened; no loose seats—insist on the trustees having them fastened down. Here, also, the teacher must set the example. If the teacher opens the door with noise, the pupils will do so. If he allows a slate or book to drop carelessly, the pupils have their cue. I heard Dr. Sangster say at one time that "he would bring a noisy school to order by his habit of doing things quietly, and not once speak to them." But order cannot be secured without punctuality; for when the door opens to admit a late pupil the attention of teacher and pupils is attracted, and business for the time is suspended. Do not think that because the pupils are quiet they are orderly—often they are then deepest in mischief. The great principle of order is to keep the pupils busy. It is unnatural to expect that little folks, full of life and spirits, will remain in order at their seats if they have nothing to do. As a general thing they like work. Ask them to write their lesson on their slates, and bring their slates to their class with them, and let the teacher look at what they have done. A few simple figures in drawing on the board, with a request that they will repeat each figure five or six times, will keep their attention for half an hour.

Do not keep the small pupils in the school-room too long. Nature is their best teacher. Let them out half the time, and on the playground they will receive their first great lessons in natural history. Let not the word "*if*" be used. Pupils soon get accustomed to a threatening teacher, and will think what they are doing is right if the teacher do not find them out.

Give the pupils a few minutes several times in the forenoon and afternoon to ask any questions from the teacher or from each other. Let the teacher pass round the room at this time, and answer the questions. Tell one the lesson, another the meaning of a word, give another the privilege of getting a book or slate from his brother or sister. Do not try to prevent unnecessary noise, though we should exert ourselves to reduce that noise to a minimum. It is impossible for forty or fifty pupils to be in a room and have as much quietness as if no person were present.

Make few, very few rules, but carry out those you do make. I remember the first day I went into my school. I had carefully made out beforehand a tabulated form of offences and the punishment due to each. The awful threatenings of that list were never carried out. One of the rules was that "whoever broke a pointer," a very nice one, "was to receive two slaps." To my utter horror, a young lady, whom I had hardly dared to look at, accidentally committed this offence. She came and acknowledged the crime; the boys and girls stood a little aloof, but quickly took in the whole scene. I did not punish her, of course, and out rushed the boys whooping and yelling. How my heart sank! I saw in a moment my prestige was gone. I have never been guilty of the same imprudence since. In conclusion, I would recommend the practice of taking away *privilege* for infraction of law and order.

THE REPORT OF THE GREEK QUESTION.

The Syndicate appointed to consider the memorial presented to the University on the subject of the obligation of passing an examination in Greek have issued their report. They state that in June they addressed circular letters to the memorialists, head masters and assistant-masters of schools, copies of which and the replies are printed in an appendix. The Syndicate are of opinion that there is good reason to believe that the existing obligation to satisfy the examiners for the previous examination both in Greek and in Latin excludes from the University a number of able and industrious students educated in schools in which Greek is not taught, or in the modern departments of classical schools. The Syndicate are of opinion that this exclusion is injurious, not only to the students, who are deprived of the advantages of residence and study in the University, but also to the schools and departments of schools thus dissociated from the University and to the University itself. The Syndicate therefore recommend:—

1. That the existing obligation to satisfy the examiners for the previous examination in two classical languages be relaxed (a proper substitute being provided for the language omitted) in the case of condidates for honors who may desire it.

It would seem that a knowledge of the two principal languages of Continental Europe might fairly be recognized as a substitute for that of Greek or of Latin, especially as particular attention is usually given to modern languages in those schools and departments of schools in which Greek is not taught. The Syndicate therefore recommend:—

2. That, in the case of those candidates for honors who do not take up both the classical languages French and German be accepted in place of one of them.

The Syndicate further recommend :—

3. That candidates for honors be permitted to take, in place of one of the two classical languages, a paper in French and German, consisting of unprepared passages for translation, not too difficult, with plain grammatical questions.

4. That candidates for honors be permitted, in case they take French and German in lieu of Greek, to take in place of the Gospel in Greek an alternative paper containing such questions on the Gospel selected for the Greek Testament subject, and such matters collateral thereto, as do not require a knowledge of the Greek language.

With a view to the discrimination of honor men and pass men, and the relaxation, in the case of honor men only, of the existing obligation to satisfy the examiners for the previous examination in both the classical languages, the Syndicate suggest :—

1. That an examination of candidates for honors be held twice in each year—namely, in the first third of the Michaelmas Term, and last third of the Lent Term.

2. That it consist of papers in (1) Mathematics, (2) Greek, (3) Latin, (4) French, (5) German, (6) the Elements of Physics.

3. That the examinations in Mathematics consist of questions in Euclid, algebra, trigonometry, the elements of conic sections and analytical geometry, and mechanics (including statics, dynamics, and hydrostatics).

4. That the examinations in Greek and Latin consist of (*a*) questions in grammar, (*b*) prose composition, and (*c*) the translation of unprepared passages, in each of which divisions the candidate shall satisfy the examiners.

5. That the examination in French and German consist of (*a*) questions in grammer, (*b*) prose composition, and (*c*) the translation of unprepared passages, in each of which divisions the candidate shall satisfy the examiners.

6. That the examination in the elements of physics consist of questions in mechanical philosophy, the laws of heat, and chemistry.

7. That no candidate be examined in more than one of these subjects.

8. That every candidate signify 14 days before the commencement of the examination the subject which he presents.

9. That this examination be open to students in their first or any later term of residence.

The report is signed by the Master of Trinity, Deputy Vice-Chancellor, Professor Kennedy, Professor Humphry, Professor Liveing, Professor Stuart, Mr. J. E. Sandys, the Public Orator, Mr. Todhunter, St. John's; Mr. Oscar Browning, King's; Mr. Henry Jackson, Trinity; Mr. A. Austen Leigh, King's; Mr. J. E. Nixon, King's; and Mr. V. H. Stanton, Trinity.

It is not signed by Dr. E. H. Perowne, Master of Corpus Christi College; Dr. Westcott, Regius Professor Divinity; Rev. J. E. B. Mayor, Professor of Latin; and Rev. G. F. Browne, M.A., Senior Proctor.

As stated above, in June last the Vice-Chancellor, at the request of the Syndicate, submitted a series of questions to the Memorialists and Masters of Schools, in order to obtain their views of the question. Their views and opinions are contained in the appendices to the report of the Syndicate, and occupy upwards of forty quarto pages. The following extracts are taken from their communications :—

Mr. Matthew Arnold should be glad if students following the Mathematical or Natural Sciences could be admitted to the University by an examination without Greek, and could also take an honor degree in those Sciences by an examination without Greek.

Professor Huxley says:—Assiduous application of the method of concomitant variations has not, as yet enabled me to discover any relation of cause and effect between ordinary Greek scholarship and literary culture properly so called, and I venture to think that a knowledge of Greek is no more an indispensable element of a liberal education, in the highest sense of the term, than is a knowledge of Sanscrit, or of the Differential Calculus, or of Mortebrate Morphology. Persons who happen to be unacquainted with any of these studies are unquestionably shut out from large and fertile fields of thought; but it will hardly be denied that they may have obtained a liberal, and even in an educational point of view, a complete culture, by the aid of other forms of mental discipline.

The Bishop of Manchester writes in favor of a removal of the existing obligation.

Mr. W. A. Stone (late Fellow of Trinity), of Lea Park, Godalming, writes:—When the languages, literatures, and sciences available for teaching purposes were few, waste of a boy's time, as regards acquirements, was comparatively of less importance, provided that the mind received a good training. Now, however, that the field of knowledge is so vast, it is very undesirable to waste any part of the time given to study in a line which is not to be followed far enough for some substantial result. I will venture to observe that if a more rational method of teaching Greek were adopted, a good knowledge of the language might be acquired in a much shorter time; and if it were possible to introduce the proper modern pronunciation, instead of the present absurd and arbitrary one, a useful Modern Language would be added to the school course, with scarcely any additional labour. I may also say that I should be extremely sorry if any change were to lead to the diminution or abandonment of a real and scholarlike study of Greek, which, however, I believe, under the present system, to be confined to a very small number of students in our Schools and Universities.

The Rev. H. W. Watson, Berkeswell Rectory, Coventry : In its existing regulations for the attainment of an Honor degree, the University appears to recognise the distinction between general cultivation and the mental discipline required for the mastery of large and difficult subjects of study. The previous and Tripos Examinations are employed to test the state of the candidate in these two particulars respectively. Every large subject admitting of logical and accurate treatment, affords a valuable mental discipline, and we cannot refuse the title of educated man in the truest sense of that term to any one who has undergone such a training, either academically or professionally, even in those cases where the absence of early education is evident in a marked and painful degree. Greek is one of the widest subjects at present studied at the University. It claims to afford the best mental discipline of any, and on account of this very excellence it is unsuitable for an indispensable portion of the lower examinations. Wherever a man might achieve distinction in any of the Honor Triposes, and is prevented from doing so by the Greek of the previous examination, it would appear that a substantial advantage has been sacrificed to a mere form. This proceeds of course upon the assumption that the Honor Triposes afford thoroughly satisfactory tests of the higher education.

The Rev. R. B. Poole, Head Master of Bedford Modern School, says : It would be a great advantage to us if Greek were not compulsory. As it now is, I have to coach boys who are going up to the University especially in Greek for perhaps six months, and to teach them just enough to get them through. This has not really any educational effect, and they are taken away from their staple studies.

Mr. James M. Wilson, M.A., Principal of Clifton College, observes: About 20 per cent. of our boys proceed annually to Oxford and Cambridge. The school has two chief divisions, the classical and modern, which divide the school from the top to very nearly the bottom. On the modern side no Greek is taught. On the classical side it is taught to all but the youngest. There is also a military and engineering department, parallel to the fifth forms, in which Greek is taught to those boys who have previously learnt it. Any opinion on the educational value of Greek, by whomsoever given, is very liable to error, because the value attributed to Greek may be readily put to other causes. Of these, the chief are—(*a*) That Greek is a part of the regular school and university course. A boy who is not doing Greek is in a side stream, and knows that he is so. (*b*) That a boy who is learning Greek is associated with the abler boys. It is needless to point out how much boys stimulate one another. The loss to the duller boys in a school if all the abler boys in it were weeded out would be incalculable. (*c*) The methods of teaching Greek and the status in the school of the side on which Greek is taught, give this subject an advantage it is difficult to estimate. Some men also may form an unfavorable opinion of the value of Greek to boys of average ability, arguing simply from the fact that the knowledge is slender, inaccurate, and valueless for practical purposes, and soon forgotten unless maintained by subsequent reading. I think this is an error which would be corrected by more extensive and careful observation of boys at their lessons, and by a fair comparison—which is not yet possible—of boys who have been educated respectively with and without Greek, but alike in other respects. But after all allowance for such accidental advantages and such admitted failures, I attach a very great value to Greek even for boys of average ability. I am not now discussing the value of a knowledge of Greek literature, but the educational value of it to a fourth form boy who is doing his twenty lines of Xenophon for a lesson. For him it is second,

if second, only to Latin and perhaps to mathematics, where mathematics are exceptionally well taught—taught, that is, so as to make boys think as well as work. When the average boy is learning his Xenophon, his mind is in a more active state than it is over any lesson except perhaps Latin. There are small problems incessantly proposed; the solution of all of them is within his power. The grammar will teach him the inflections, the dictionary the meaning of the words, the Syntax the constructions; but the mere desire to save himself the trouble of using grammar and dictionary perpetually makes the boy think and try to make out the meaning. If he is slipshod in his work it is brought home to him, and his conscience admits that he has been slipshod. The boy is busier and happier in preparing such a lesson than in preparing a lesson in German, or French, or English. or Natural Science, and in using his mind more than he would in working examples in arithmetic and algebra. Problems in geometry give him as good an exercise, but it is almost impossible to keep boys at work at problems in geometry. Hence I am clear that, speaking of English education *as a whole*, no subject could be substituted for Greek without educational loss to the boys *at the time*, besides all later and wider consequences of such a change, which are of a most serious kind.—I should wish to see either French or German or Natural Sciences admitted as alternatives for Greek. Modern schools and modern sides of Classical Schools exist, and will continue to exist; and at present they are not in a satisfactory state. They are outside the sphere of the University; the education they give is regarded at *technical*, not as *liberal*; on that account they are denuded of the more literary boys; there is no crown or goal to their work. They are to some extent a refuge for the incapable.

Dr. Hornby, Head Master of Eton, writes: Greek is taught to all boys in the school, and is required during their whole course. In some cases a few boys in the Army Class have been excused Greek, or part of their Greek lessons; but this has been discontinued. We may perhaps resume it in a few special cases. I think that its educational value is very great even for boys of average ability. It is a great gain for boys not intended for a learned profession, but for the army or for business, to have read, as some such boys in my time at school had read, the whole of Homer's Iliad. As a means of literary culture this was no small gain, even when the language was not studied very critically. In other ways the gain from Greek teaching is, I think, greater now than it was in my school days. I know of no subject which could be substituted for Greek without very serious educational loss.

The Rev. E. H. Bradby, Head Master of Haileybury College:—Greek is taught to *all* boys on the classical side *pari passu* with Latin, though in the lower half of the school boys are generally more forward in Latin than they are in Greek. In the modern side it is not taught. As a rule, the abler boys do not join the modern side, but, so far as I can see, I consider the mental fibre and grasp produced by education on the classical. The schools must in due time follow the Universities, so far as the classical sides are concerned. The study of Greek would gradually flag, and be supplanted, more or less, by more favored subjects, in the same way that the study of Latin Verse writing (whether that be a thing to be regretted or not) has dwindled in the last 20 years.

The Rev. W. E. Pryke, Head Master of Lancaster School, says that of *languages*, Greek seems to be the best as an educational instrument. This is true even in the case of average boys, and of those who go no further than the Accidence and easy exercises. A boy cannot learn his Greek Grammar without acquiring a certain amount of *exactness* in thought and expression, and I believe that more boys get mental accuracy and method from their training in Greek than from their Euclid and Algebra. Speaking generally, the Greek boys do best in *all* their other subjects. There is much truth in the trite sarcasm that a "modern side" is the refuge of the intellectually destitute. Non-Greek boys never do well in Latin. If the Universities consent to discontinue their demand for some knowledge of Greek from all students, I fear that the study will gradually die out in ordinary Grammar Schools. If, through the discontinuance of Greek, the tone of ordinary Grammar School education be lowered, and we cease to send classical scholars to the University, it seems to me that the Universities themselves will suffer serious loss. The lists of open scholarships in which the small schools are generally respectably represented, will in future contain the names of public school men only; and schools like mine will gradually cease to be seminaries of scholarship.

Dr. Huckin, Head Master of Repton School: Greek is taught throughout the school, except in the modern form. In the case of boys of moderate ability, I consider that it matters very little what they are taught; they do not as a rule exercise any considerable degree of intellectual activity, but passively imbibe or acquire what their teachers impress upon them. Greek, if intelligently taught, is just as valuable to them as any other subject; certainly in my opinion not more valuable than some others may be, but not less valuable. German might be substituted without educational loss, but such an arrangement would seriously increase the expense of education without definitely improving it. The substitution of any subject as an alternative for Greek would involve the bifurcation of every form. This would nearly double the cost of education. The most promising Natural Science students are in the Classical School. I do not find that Natural Science is equal to Literature as a vehicle of general instruction; but in some boys it certainly produces higher results than are produced by Greek. So far, however, as I can judge, the cases in which this can be predicted are less than 10 per cent. of those who learn Science. I have been (unwillingly to some extent) forced to conclude that, for the *purpose of the higher education of boys*, Latin and Greek combined with Mathematics are more effectual than any other combination would be.

The Rev. Dr. Jex-Blake, Head Master of Rugby: In a complex educational organization it is hard to estimate the value of any single item in producing the general result; but probably there is no single force employed at Rugby so powerful for clearing and training the mind as Greek, for either the superior or the average boy. Even for inferior boys it would perhaps be as valuable as any linguistic training, if there were not so many other subjects pressing on the boy's distracted understanding. An inferior boy cannot really master two Dead Languages + his native literature + two other Modern Languages + Mathematics + several other branches of Natural Science + History Ancient and Modern + Historical and Doctrinal Theology + Drawing + Music, between his fourteenth and his eighteenth year. Such a boy would learn more if he were taught less; and would at 18 have a better understanding if he had struggled at the rudiments of fewer things. Which of his inscrutable studies he was least fit for, must be a matter of personal consideration; but it is clear that two dead languages furnish too ambitious a basis for any educational structure that a really inferior boy should try to rear. It is not a smattering of many things that it is desirable to require of a lad of nineteen, but a sound knowledge of some few main and primary studies; a knowledge not great in itself, but yet involving a knowledge of the conditions of all true learning; a knowledge of the difference between ignorance and knowledge; the only kind of knowledge which is suggestive and fertile and not easily lost.

The Rev. T. B. Rowe, of Tonbridge School, observes that pollmen are presumably average men, with no determining taste for either Science or Literature, and of moderate ability. A modicum of both Science and Literature may be required of them, and should include Greek, as hitherto. The "smattering" which pollmen are said to acquire of Greek is as sound as any knowledge within their grasp, and is usually the most educationally fruitful of their acquirements. There is no substitute for it possible. For Honors for a literary degree, of whatever sort, Greek is an essential. No substitute is possible. For Honors for a scientific degree (including the Mathematical Tripos), Greek may well be excused, or rather a choice allowed, in the Previous examinations. The only choice I should think good would be "wider" Latin, including a serious testing in "unseen" translation: but it is possible that German might also be admissable.

The Rev. Edward Thring, Head Master of Uppingham, writes: In my opinion, unless we are to give up the idea of a literary education, boys of average ability must learn Greek. Badly taught subjects no doubt are profitless in proportion to their difficulty. But legislation should legislate for progress and improvement, not for retrograde movement. From this point of view I do not see how all the original thought, all the original beauty, and all the original artistic skill of the ancient world can be excluded profitably from high education. And if we destroy the steps up, we destroy the high education. If Greek is given up, Greek, and with it Asiatic History, will fall. Are we prepared for this? If Greek is given up, the most important poetry, philosophy, theology, and we may add Philology of the world, become a narrow monopoly. The Greek Testament would be closed to many more than it is at present. Are we prepared for this? The ignorance displayed by many eminent men of the facts of human progress is not encouraging. Greater ignorance must be the result of dropping Greek.]

do not see that the case of boys of average ability can be separated off, and dealt with singly by itself. If Greek continues to be taught universally in all schools of eminence, the ordinary educated Englishman will know something of Greek, and all will be able to go on, if they choose. If Greek is not continued, only a few will learn, the door will be closed to the majority, and the question whether they are boys of average ability will not come forward at all. No line can be drawn where the mere drudgery of training ends and literary power begins. Till that is possible, no answer can be given of the educational value of Greek to the average boy, beyond the answer, which however evades the whole exercise of mental gymnastics, and as a matter of vocabulary, it is the best subject known. I do not see how any modern subject can be a substitute for the whole interest of the ancient thought power of mankind; or how any modern language, with the fatal facility of mistaking a parrot-like fluency for knowledge, can give the mental training that is involved in learning Greek. I should not alter the educational system or arrangements of this school in the least in consequence of the legislation of the Universities on the subject of Greek; remembering always how many years Cambridge had no Classical Tripos, but the schools nevertheless remained classical schools. The modern subjects are either worthy of a degree, or they are not. If they are worthy of a degree, as I think they are, then a degree given for them is an intelligible honor, and a thoroughly satisfactory conclusion. If they are not worthy of a degree of their own (as some of their promoters appear to think), they ought not to make the B.A. degree less of a reality, in order that they may seem to share a culture which they do not share.

The Rev. E. C. Wickham, Head Master of Wellington College: Theoretically, and supposing the arrangements for teaching to be put on a level, I feel it very difficult to weigh subjects against one another in respect of educational value. Practically I am convinced that the education on the modern side, although successful for its chief immediate purpose, viz., that of preparing boys for the Army Examinations, is not nearly so cultivating to the intelligence, even to average boys, as that on the Classical side. As to the effect of such a change as that suggested upon school education, I must say that I do not desire to encourage our 'Modern' departments by making them generally avenues to the Universities. They seem to me very valuable for their own purposes. They find boys who are going to the army, business, country life, studies more within their tastes and more directly and practically useful than the Classics. But so far as I have seen their working here (and our Modern School is successful for its own purpose, but perhaps dominated more than some by the necessities of Army Examinations), I do not feel that the new education is as educating as the old. A boy of the same age and capacity in the Classical School will understand an English author better, will write a better letter, speak better in the Debating Society, start more intelligently at a new subject, than his equal at the Modern School. Opening the University generally to boys in the Modern School would, no doubt, in the present temper of English parents, draw boys from the Classical to the Modern School. I doubt whether, in the face of the practical aims which limit the Modern School education, it would raise the tone of culture in it to a degree which would compensate.

The Rev. Prebendary Scott, Head Master of Westminster School, reports that the *unanimous* opinion of the masters there is in favor of retaining Greek as a *compulsory* subject for ordinary degrees at Cambridge. He adds:—I do not think any language could be substituted for it without serious educational loss, as things now stand. The precision of the Classical tongues and the accuracy with which the syntax has been analysed, as well as the fact that the rules are fixed and not liable to change from varying usage, make them of peculiar value for education. It is doubtful whether Latin would long survive the separation from Greek; and the Greek literature is infinitely richer and more full of interest for boys, as well as for grown men.

"BUT."

I have been much amused by the article on the word "But" in the CANADA SCHOOL JOURNAL for May, by H. P. B. For puzzle-headedness it beats anything I ever met with. He tells us that "All but him had fled" must be bad grammar, because "*all*" is not the subject, for *all* had not fled; consequently "*him*" is a part of the subject, and as the subject must be in the nominative, "*him*" must be "*he*." Does he not see that if "*he*" is *a part of the subject*, since the verb states something about that which the subject denotes, "had fled" must be stated of "he" as well as of "all," that is to say *he had fled*, which flatly contradicts the sense of the passage?

It is quite true that expressions like "All but he had fled" are so common that usage tolerates them, but it remains true that in such phrases "but" was originally and properly a preposition. The dative case follows it in Anglo-Saxon. For example, in Beowulf (*l* 705) we read: "Sceotend swaeton ealle buton anum," = "the men-at-arms slept, all but one." About that point there can be no dispute. The word *buton* (=but) is a preposition and not a conjunction in such constructions.

H. P. B. must try and master the fact that if x stands for a certain "all," then $x-1$ may be described in words as "all minus one," "all save one," "all except one" (*i.e.*, "all, one being left out"), or "all leaving out one" indifferently.

C. P. MASON.

London, May, 1880.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

SOLUTIONS OF PROBLEMS IN EXAMINATION PAPERS.

Not having room for solutions of all the questions in last issue, we give those of the problems in the Honor Algebra-Trigonometry and Problem Papers, as likely to be of greatest interest or present the greatest difficulty.

ALGEBRA AND TRIGONOMETRY—HONORS.

2. Rider. Let

$$1.1^2+\ldots+n(n^2+\ldots+1^2) = A+Bn+Cn^2+Dn^3+En^4+Fn^5\ldots.(1)$$

Then... $+(n+1)\{(n+1)^2+\ldots+1^2\} = A+B(n+1)+\ldots\ldots$

Subtracting,

$$(n+1)\{(n+1)^2+\ldots+1^2\} = B+C(2n+1)+D(3n^2+3n+1)+$$
$$E(4n^3+6n^2+4n+1)+F(5n^4+10n^3+10n^2+5n+1)+\ldots\ldots\ldots$$

$$\therefore\ (n+1)\frac{(n+1)(n+2)(2n+3)}{6} = \ldots\ldots\ldots$$

In this identity equating the coefficients of the different powers of n, we find B, C, D, E, F, the coefficients beyond F vanishing. A may be found by inserting in (1) the values of B.....F, and putting $n=1$.

3. Rider. $\sqrt{n^2+1}-n =$

$$\frac{1}{\sqrt{n^2+1}+n} > \frac{1}{\sqrt{n^2+2n+1}+n} > \frac{1}{2n+1}$$

$\therefore$ the series is greater than $\frac{1}{1}+\frac{1}{3}+\frac{1}{5}+\ldots\ldots$, which is divergent (See Todhunter or Gross), and $\therefore$ the series is divergent.

4. Rider. $nf_p = \frac{n.(n+1)\ldots\ldots(n+p-2)}{\lfloor p-1}$ (Todhunter, § 669)

$$= \frac{\lfloor n+p-2}{\lfloor p-1 \lfloor n-1} = \frac{p.(p+1)\ldots\ldots(p+n-2)}{\lfloor n-1} =$$

coeff. of x^{n-1} in $(1-x)^{-p}$ (1)

$$\therefore\ (1-x)^{-r} = {}_1f_r+{}_2f_rx+\ldots\ldots+{}_mf_rx^{m-1}+\ldots\ldots$$
$$(1-x)^{-s} = {}_1f_s+{}_2f_sx+\ldots\ldots+{}_mf_sx^{m-1}+\ldots\ldots$$

$\therefore$ series is coeff. of x^{m-1} in $(1-x)^{-(r+s)} = {}_mf_{r+s}$, by (1).

5. Rider. Assume that it holds for the $(n-1)$th and nth convergents. Now, Todhunter, Ex. XLIV., 13,

$$p_{n+1}=(n+1)(p_n+p_{n-1})$$
$$q_{n+1}=(n+1)(q_n+q_{n-1})$$
$$\therefore\ p_{n+1}+q_{n+1}=(n+1)(\lfloor\underline{n+1}+\lfloor\underline{n}),\ \text{(by assumption)},$$
$$=\lfloor\underline{n+1}\ (n+1+1)=\lfloor\underline{n+2}.$$

Hence if the law holds for the $(n-1)$th and nth, it holds for the $(n+1)$th; but it may be shewn to hold for the first and second, therefore for the 3rd, and therefore for the 4th, &c., and therefore generally.

7. Rider. $f(2x)=\frac{\cos 2x}{\cos^2 x}f(x)$

$$\therefore f(x)=\frac{\cos x}{\cos^2\frac{x}{2}}\cdot f\left(\frac{x}{2}\right)$$
$$=\frac{\cos x}{\cos^2\frac{x}{2}}\cdot\frac{\cos\frac{x}{2}}{\cos^2\frac{x}{2^2}}f\left(\frac{x}{2^2}\right)$$
$$=\frac{\cos x}{\cos^2\frac{x}{2}}\cdots\cdots\cdots\times f(o)$$
$$=\frac{\cos x}{\cos\frac{2}{x}\cdot\cos\frac{x}{2^2}\cdots\cdots}\times m$$
$$=\frac{\cos x}{\frac{\sin x}{x}}m\quad\text{(Todhunter, Trig., § 129.}$$
$$=mx\cot x.$$

11. Rider. Todhunter, Trig., § 310.

12. Riders. See Todhunter's Trigonometry, Ex. XXIII., 4 and 5, also note on these in Answers.

PROBLEMS.—HONORS.

1. Let ABC be the triangle. Draw AD bisecting the angle A. In AD take any point E, and draw EF perpendicular to AC. Construct the triangle CGH so that $CG=AE$, $GH=2EF$ and GH perpendicular to AC; and let CG meet AD in D. The proof is evident. The construction is suggested by the trigonometrical formula $\frac{\sin A}{a}=\frac{\sin B}{b}$.

2. Let ABC be the triangle, and let the line bisecting the exterior angle at A meet BC in D. About ABC describe a circle, and let DA produced cut this circle in E. Then the triangles EAC, BAD are equiangular; $\therefore EA, AD=BA, AC$. To each add the sq. on AD, and $BA, AC+AD^2=ED, DA=BD, DC$. Proof suggested by that of Prop. B, Euc., Bk. VI.

3. Readily obtained from the formula

$$(\text{area})\ A=\sqrt{s(s-a)(s-b)(s-c)}$$

by inserting $\frac{2A}{x}$ for a, $\frac{2A}{y}$ for b, &c., and reducing.

4. See Todhunter's Algebra, Examples XXXV., No. 20: "If t_0, t_1, &c."

5. Let $S'=\frac{1}{1}+\frac{1}{5}+\frac{1}{14}+\frac{1}{30}+\cdots\cdots$
$$+\frac{1}{\frac{1}{3}n(n+1)(2n+1)}+\frac{1}{\frac{1}{3}(n+1)(n+2)(2n+3)}$$

there being $n+1$ terms. It will be observed that the denominators are the sum of the squares of all the positive integers up to that which is the number of the term. Thus $30=1^2+2^2+3^2+4^2$.

$$\therefore S'-1=\frac{1}{5}+\frac{1}{14}+\frac{1}{30}+\cdots\cdots+\frac{1}{\frac{1}{3}(n+1)(n+2)(2n+3)}.$$
$$\therefore\ 1=\frac{4}{1\cdot5}+\frac{9}{5\cdot14}+\cdots\cdots\frac{1}{\frac{1}{3}(n+1)(n+2)(2n+3)}$$
$$\therefore\ \text{required series}=1-\frac{6}{(n+1)(n+2)(2n+3)}.$$

6. If p be the ending digit in the number. Then on raising the number to its nth power, to determine the digit in which it ends, we have only to consider p^n, as this is the only part of the power that can affect the units place.

By Fermat's Theorem, $p^{n-1}-1$ is a multiple of n.

$$\therefore\ p^n-p\cdots\cdots\cdots\cdots$$

Also if p be odd, $p^{n-1}-1$ is a multiple of $2n$, and therefore also p^n-p is. And if p be even p^n-p is a multiple of $2n$. Hence p^n = a multiple of $2n+p$, and the power ends in p.

7. It will be found that the quotients are all 1; and each numerator is therefore formed by adding together the two preceding numerators. Hence

$$p_{2n}-p_{2n-2}=p_{2n-1}$$
$$p_{2n-2}-p_{2n-4}=p_{2n-3}$$
$$\&c.,$$
$$p_4-p_2=p_3.$$

And adding, the required result is obtained.

The problem is analagous to that discussed in Todhunter's Algebra, § 499. No combination formula, however, need be used. Thus in (2) we may take 12 α's and 13 π's, 11 and 14, or 10 and 15, giving three combinations. Also we may take 12 α's, 12 π's, and 1 ι, or 11, 13, 1, or 10, 14, 1, or 9, 15, 1; or 12, 11, 2, or 11, 12, 2, &c. The answers are 15 and 12.

9. The problem is not correct. We suggest that it be altered to "Prove that $\varphi(0)+\cdots\cdots+\varphi(n)=3^n$," and proceed as follows:

Multiplying $\lfloor\underline{n}$ into the bracket,

$$\varphi(r)=\frac{n(n-1)\cdots\cdots(n-r+1)}{\lfloor\underline{r}}+\frac{n(n-1)\cdots\cdots(n-r+2)}{\lfloor\underline{r-1}}.r+\cdots$$

Now $(1+x)\{1+x(1+x)\}^n=(1+x)+nx(1+x)^2+\cdots\cdots$
$$+\frac{n(n-1)\ \cdots\ (n-r+1)}{\lfloor\underline{r}}x^r(1+x)^{r+1}+\cdots$$

In this the coefficient of x^r is

$$\frac{n(n-1)\cdots(n-r+1)}{\lfloor\underline{r}}+\frac{n(n-1)\cdots(n-r+2)}{\lfloor\underline{r-1}}.r+$$
$$\frac{n(n-1)\cdots\cdots(n-r+3)}{\lfloor\underline{r-2}}\cdot\frac{(r-1)(r-2)}{\lfloor\underline{2}}+\cdots\cdots,\ i.e.,\ \varphi(r).$$

Hence $\varphi(0)+\cdots\cdots+\varphi(2n+1)=$
sum of coeffs. in $(1+x)\{1+x(1+x)\}^n=2\cdot3^n$.

Or since coefficients equidistant from beginning and end are equal,

$$\varphi(0)+\cdots\cdots+\varphi(n)=3^n.$$

10. $\begin{vmatrix}\alpha,&-1,&-1\\-1,&\beta,&-1\\-1,&-1,&\gamma\end{vmatrix}=0.$

11. (1.) Substitute $\frac{\pi}{2}-(A+B)$ for C.

$$\frac{1}{\tan A}+\frac{1}{\tan B}+\tan(A+B)\frac{\tan A\tan B-1}{\tan A\tan B}=o,\ \text{an identity.}$$

(2.) True if $\sin A\cos B\cos C+\cdots+\cdots=\sin A\sin B\sin C+1$.
if $\sin(A+B+C)=1$
if $\sin\frac{\pi}{2}=1$.

2. Let the circles intersect in BC at D; and let the tangents intersect in E; let the circle on AC have its centre at H, and let F (in DE) be the centre of the circle whose radius is required. Draw FG perpendicular to EC. Then

$$FH^2=GC^2+(HC-FG)^2.$$

Or if a be the radius of the circle on AC, and x that of the small circle,

$$(a+x)^2=\left(\frac{2a}{\sqrt{3}}-\frac{x}{\sqrt{3}}\right)^2+(a-x)^2$$

$$\therefore\quad x=8a-a\sqrt{60}=\cdot 25a \text{ nearly.}$$

13. $AA'^2=a^2+c^2-2ac\cos(B-60°)$.

$AA''^2=a^2+c^2-2ac\cos(B+60°)$.

Whence $(AA'\cdot AA'')^2=a^4+b^4+c^4-a^2b^2-a^2c^2-b^2c^2$.

So also by symmetry $(BB'\cdot BB'')^2$ and $(CC'\cdot CC'')^2$ equal the same.

14. $p=\dfrac{a}{2\tan A}$, &c. Substituting, expression is true if

$$\frac{abc}{4\tan B\tan C}+\ldots\ldots\ldots=\frac{abc}{4}$$

if $\tan A+\tan B+\tan C=\tan A\tan B\tan C$.

15. The circle through the foci will plainly have its centre in the axis minor. Let this centre (B) be at distance β from the origin. Then the equation to this circle is $x^2+y^2-2\beta y=a^2e^2$, (1). Let A be the point from which tangents are drawn. Then the equation to a circle on AB as diameter is $x^2+y^2-ax-\beta y=0$, (2). Evidently the points of contact which form the locus, will be where (1) cuts (2). Eliminating β, we obtain for this locus $(x-a)^2+y^2=a^2(1-e^2)=b^2$,—a circle whose radius is b. Of course by varying β in (1) we get circles which pass through all points of the ellipse, and on eliminating β we obtain a result which holds for all such circles.

16. If (x, y) be co-ordinates of P, since PE equals intercept of tangent at P on axis of y, $PE=\dfrac{b^2}{y}$; also $CN=x$. $\therefore$ area $=\frac{1}{2}CN.PE=\frac{1}{2}\dfrac{b^2}{y}.x=\frac{1}{2}BC^2.\dfrac{CN}{PN}$,—a different result from that given.

17. Make CA, CI the axes, and form the equations to the lines passing through the ends of the perpendiculars, and thence find the angle between these lines. The results are cumbrous. Doubtless some short method exists.

18. Let r be the radius vector to the point of contact, and p the perpendicular from the focus on the tangent. The equation to PT may be written $x\cos\alpha+y\sin\alpha=\sqrt{a^2\cos^2\alpha+b^2\sin^2\alpha}$.

$$\therefore\quad p=\sqrt{a^2\cos^2\alpha+b^2\sin^2\alpha}-ae\cos\alpha.$$

If (x', y') be the point of contact,

$$\frac{\frac{x'}{a^2}}{\cos\alpha}=\frac{\frac{y'}{b^2}}{\sin\alpha}=\frac{1}{\sqrt{\ldots\ldots}}$$

$$\therefore\quad x'=\frac{a^2\cos\alpha}{\sqrt{\ldots\ldots\ldots\ldots}}$$

$$\therefore\quad r=a-ex'=a.\frac{\sqrt{\ldots\ldots\ldots}-ae\cos\alpha}{\sqrt{\ldots\ldots}}$$

$$\therefore\quad \sin SPT=\frac{p}{r}=\frac{\sqrt{a^2\cos^2\alpha+b^2\sin^2\alpha}}{a}$$

And $\therefore$ since the other tangent is perpendicular to this

$$\sin SQT=\frac{\sqrt{a^2\sin^2\alpha+b^2\cos^2\alpha}}{a}$$

$$\therefore\quad \sin^2SPT+\sin^2SQT=\frac{a^2+b^2}{a^2}=\text{const.}$$

SOLUTIONS OF PROBLEMS IN APRIL NO.

1. $\sqrt[3]{a+x}+\sqrt[3]{a-x}=b$.

Cubing $a+x+3\sqrt[3]{a^2-x^2}\,(\sqrt[3]{a+x}+\sqrt[3]{a-x})+a-x=b^3$.

$$\therefore\quad 3\sqrt[3]{a^2-x^2}\,(b)=b^3-2a.$$

$$x^2=a^2-\left(\frac{b^3-2a}{3b}\right)^3;\text{ whence } x.$$

3. $x^2-yz=a^2$, $y^2-zx=b^2$, $z^2-xy=c^2$.

Multiplying the second and third together, and subtracting the square of the first, we get

$$x(3xyz-x^3-y^3-z^3)=b^2c^2-a^4.$$

Hence by symmetry,

$$\frac{x}{a^4-b^2c^2}=\frac{y}{b^4-c^2a^2}=\frac{z}{c^4-a^2b^2}=k, \text{ suppose.}$$

Hence substituting in the first equation,

$$k^2(a^6+b^6+c^6-3a^2b^2c^2)=1.$$

$$\text{whence } x=\pm\frac{a^4-b^2c^2}{(a^6+b^6+c^6-3a^2b^2c^2)^{\frac{1}{2}}}.$$

5. Solution by Neil Morrison, of Oro.

A beats B by 20 yards.
C " D " 60 "
D " B " 40 "

D goes 1760 while B goes 1720

$\therefore$ " 1700 " " $\dfrac{1720\times1700}{1760}=1661\frac{4}{11}$.

But C goes 1760 while D goes 1700, therefore C goes 1760 while B goes $1661\frac{4}{11}$.

Now A goes 1760 while B goes 1740.
C " 1760 " B " $1661\frac{4}{11}$.
B " 1740 " A " 1760,

$\therefore B$ " $1661\frac{4}{11}$ " A " $\dfrac{1760}{1740}\times1661\frac{4}{11}=1668\frac{8}{29}$.

But C goes 1760 while B goes $1661\frac{4}{11}$. Therefore C beats A by $91\frac{7}{29}$ yards.

We have received attempts at solutions of 2 and 4, none of which, however, were successful, and we leave the problems for the further exercise of the ingenuity of our subscribers. Of course they may may be solved by any of the methods used in the case of biquadratics. (D. M. C. Your solution of 4 failed at the point where you obtained $a-y-x^2=d(a-y-x^2)$, and concluded that $d=1$. It must be remembered that $x^2+y=a$, and that we are therefore not justified in dividing out by the factor $a-y-x^2$ which is zero. You will find that your values will not satisfy the second equation.

Mr. D. J. Scully, Lindsay, has forwarded the following solution of the ladder problem of the January issue, in which by a somewhat elaborate but sufficiently ingenious geometrical construction he has avoided the solution of an ordinary quadratic:

Let AB be the horizontal plane, AC the shorter column, and KG the longer. At the point C in straight line AC make an angle ACD equal to the angle of an equilateral triangle (I. 23) to meet horizontal plane in D. From CD cut off a part CE equal to the longer column. From E draw EF at right angles to CD to meet AB in F (I. 11). Join CF. Upon CF and CD describe equilateral triangles CGF, CDH respectively (I. 1); from G drop GK perpendicular to AB, to meet it in K (I. 12); bisect angle DCH by CL, to meet HD in L (I. 9). CL can be proved parallel to AD.

Triangles CEF and GKF can be proved equal in all respects.

$\therefore$ $CE=GK=130$; $CD=220$; $\therefore$ $ED=90$,

also $AD=110\sqrt{3}$. $\therefore$ $CL=110\sqrt{3}$. Triangles CLD and DEF are equiangular, and therefore sides about the equal angles proportionals (VI. 4).

$\therefore$ $CL : LD :: ED : EF$, or $110\sqrt{3} : 110 :: 90 : EF$,

and hence $EF = \frac{110 \times 90}{110\sqrt{3}} = 30\sqrt{3}$,

$\therefore$ $CF = \sqrt{(130)^2 + (30\sqrt{3})^2} = 140$ = required length of ladder.

The algebra solution gives also its length = 140.

PROBLEMS FOR SOLUTION.

Subscribers ask for solutions of the following:

1. A beam, AB, rests with one end, A, against a smooth vertical wall, and the other end, B, on a smooth, horizontal plane; it is prevented from sliding by a cord tied to one end of the beam, and to a peg at the bottom of the wall. The length of the beam is 10 ft. 6 in., and the length of the string 9 ft. Suppose the weight of the beam to be 112 lbs., and to act vertically through its middle point, find the forces acting on the beam.

2. The paper duty was 1½d. per lb., and the weight of a certain book 1½ lbs. The paper manufacturer realized 10 per cent. on his sale, and the publisher 20 per cent. on his outlay. What reduction might be made in the price of the book on the abolition of the paper duty, allowing to each tradesman the same rate of profit as before?

3. A broker charges me 1½ per cent. commission for purchasing some uncurrent bank bills at 25 per cent. discount; of these bills, three of $10 each, and one of $50 become worthless. I dispose of the remainder at par and thus make $520. What was the amount of bills purchased? W. A. Moffat, South Gloucester.

4. In any triangle ABC it is required to find points D in AB, E in BC, and F in AC, such that $AD = AF$, $BD = BE$, and $CE = CF$, using no proposition beyond Book I., Euc.

W. S. Cranston, Arnprior.

A. M., Pinkerton.—Space would not permit our inserting the solutions of these 24 problems. If, however, you copy and send any one which is particularly troublesome, we will send you the solution.

G. R. M., Uxbridge.—Your problems have, in effect, appeared in a previous number.

Subscriber, New Brunswick.—There must be something wrong about your problem which says "⅔ of 1½ times his ready money, and ¾ of what was then left," for ⅔ of 1½ would be all. We fear, however, that the style of problem is too easy for insertion.

Mr. J. J. Parker, of Truro, Nova Scotia, sends us two solutions of the "Celebrated Problem," of our May issue. We regret that want of space prevents us from inserting them,—they are exceedingly good. He also informs us that he has two other solutions. We hope to be able to find space for all of them at some subsequent time.

Practical Department.

PROGRAMME OF EDUCATIONAL MEETINGS DURING THE HOLIDAYS.

The true teacher always learns more from men than from books. He will be intellectually quickened to a greater extent by a few days spent in actual contact with teachers, and the leaders of educational thought than by a year of study of books. Canadian teachers are exceptionally privileged this year in having three great meetings within their reach. *The Ontario Teachers' Association* meets in Toronto August 10th, 11th, and 12th, and an unusually good programme has been provided. The fact that the system of Industrial Drawing introduced into Boston by Mr. Walter Smith, will be explained and illustrated by a very large collection of the work done by the pupils in that city, is in itself a sufficient attraction to cause a large attendance.

The National Teachers' Association of the United States meets at the beautiful Lake Chautauqua in July, from the 13th to the 16th. The fare from Toronto and return is about $5.00.

The International Society for the Investigation of the Principles of Teaching meets at Wellesley Island on the 16th of August. A full day is to be devoted to the consideration of each subject. This is a very important society, and Canadian inspectors, and Normal and Model School teachers would obtain much benefit by joining it. All teachers are at liberty to attend its meetings. Professor Hoose, whose portrait is given on the first page of this number of the Journal, is the President of the Society.

Below are given the programmes of the meetings above named:

ONTARIO TEACHERS' ASSOCIATION.

The twentieth Annual Meeting will be held in the Public Hall of the Normal School, Toronto, on August 10th, 11th, and 12th, 1880.

The following subjects will be discussed:

President's Opening Address—Mr. R. Alexander, Newmarket.

Industrial Drawing, with an Art Exhibition of the work done in the Boston Schools, Mr. Walter Smith, State Director of Art, Mass.

The Teacher as a Moulder of Character, Professor Wells, Canadian Literary Institute, Woodstock.

The Natural Sciences in Public Schools, Mr. D Boyle, Elora.

Physical Education in School, Mr. J. Coyle Brown, I.P.S., Peterborough.

Professional Examinations in County Model Schools, Mr. J. Dearness, I.P.S., East Middlesex.

Recent School Legislation, Mr. D. Fotheringham, I.P.S., Aurora.

Professor Goldwin Smith will address the Association, if in Toronto at the time of the Coneention.

High School Section.

First Day.—I. *Legislative Aid for Secondary Education*, introduced by A. Purslow B.A., LL.B., High School, Port Hope, and A. P. Knight, M.A., Coll. Inst., Kingston. II *High School Regulations*, Geo. H. Robinson, M.A., High School, Whitby.

Second Day.—*Text Books and Departmental Examinations*, H. J. Strang, B.A., High School, Goderich, and D. C. McHenry, M.A., Coll. Inst, Cobourg.

Third Day. I. *The University and the High Schools*, J. Millar, M.A., Coll. Inst., St. Thomas. II. General Business.

Public School Section.

Recent School Legislation, Mr. W. B. Harvey, Barrie.

Rotation of Examiners, Mr. S. McAllister, Toronto.

Is Provincial Uniformity of Text Books Desirable? Mr. D. Herner, Waterloo.

Is it desirable to make any change in the Superannuation Regulations? Mr. D. Boyle, Elora.

Representation of the Provincial Association, Mr. F. W. Chapman.

Means of Supply of Teachers, Mr. H. Dickinson, Stratford

The Inspector's Section will have interesting work in addition to the above.

PROGRAMME OF THE NINETEENTH ANNUAL MEETING OF THE NATIONAL EDUCATIONAL ASSOCIATION, TO BE HELD AT CHAUTAUQUA, N. Y., JULY 13, 14, 15, 16, 1880.

Tuesday July 13.—*Morning Session*—1. Prayer. 2. The Inaugural Address: J. Ormond Wilson, Superintendent of the Public Schools of the District of Columbia, Washington, D. C. 3. Paper: Object Lessons in Morals, the Rev. A. P. Mayo, Springfield, Mass. 4. Modelling in the Public Schools as well as in the Kindergarten—an Exercise in Clay Edward A. Spring, Sculptor, Perth Amboy, N. J. 5. Report of Messrs. J. P. Wickersham, M. A. Newell, and J. Ormond Wilson, the committee appointed at the Philadelphia Meeting to secure from Congress an Act of Incorporation of the Association. 6. Appointment of Committees; Miscellaneous Business. *Afternoon Session*—Department of Industrial Education—1. Opening Address: Technical Training in American Education, President E. E. White, Purdue University, Lafayette, Indiana, President of the Department. 2. Paper: Technical Instruction in the Land-grant Colleges, President J M. Gregory, Illinois Industrial University, Urbana, Illinois. *Evening Session*—1. Paper: The Massachusetts System of Industrial Art Education, Prof. Walter Smith, State Director of Art Education, Boston, Massachusetts. 2. Paper: The Unattainable in Public School Education, A. P. Marble, Superintendent of Public Schools, Worcester, Massachusetts.

Wednesday, July 14.—*Morning Session*—1. Prayer; Unfinished miscellaneous business. 2. Paper: The Domain of Nature and of Art in the Process of Education, Prof. W. H. Payne, Chair of Education, University of Michigan, Ann Arbor, Michigan. 3. Paper: Normal Departments in State Universities, Miss Grace C. Birr, Professor of Pedagogics, Missouri State University, Missouri. *Afternoon Session*—Department of Normal Schools—1. Opening Address, J. C. Gilchrist, Principal of the Iowa State Normal School, Cedar Falls, Iowa, President of the Department. 2. Paper: The Study of the Philosophy of Teaching—its value in the Preparation of Teachers, A. G. Boyden, Principal of the State Normal School, Bridgewater, Massachusetts. 3. Paper: Instruction in

Subject-Matter, a legitimate part of Normal School Work, G. L. Osborne, President of the State Normal School, Warrensburg, Missouri. 4. Paper: The Obstructions, Natural and Interposed, that resist the Formation and Growth of the Pedagogic Profession, G. P. Brown, Principal of the State Normal School, Terre Haute, Indiana. 5. Paper: The Science and the Art of Education—to what extent developed and what their Deficiencies, J. H. Hoose, Principal of the State Normal and Training School, Cortland, New York. *Evening Session*—1. Paper: The Development of the Superintendency, Charles Francis Adams, Jr., Quincy, Massachusetts. 2. Paper: The Education of the Negro—its Rise, Progress, and present Status, Gustavus J. Orr, State School Commissioner, Atlanta, Georgia.

THURSDAY, JULY 15.—*Morning Session*—1. Prayer; unfinished miscellaneous business. 2. Paper: Effect of Methods of Instruction upon the Results of School Work, J. W. Dickinson, Secretary of the State Board of Education, Boston, Mass. 3. Paper: Text-Books and their Uses, William T. Harris, Superintendent of Public Schools, St. Louis, Missouri. *Afternoon Session*—Department of Elementary Schools—1. Opening Address, J. H Smart, State Superintendent of Public Schools, Indianapolis, Indiana, President of the Department 2. Paper: The Debasement of the Moral Currency, Miss Mary W. Hinman, Teacher, La Porte, Indiana. 3. Paper: What should we seek to accomplish in the Reading Exercise, E G. Vaile, Principal Clark School, Chicago, Illinois. 4. Paper: How can Character be Symmetrically Developed, Miss Ellen Hyde, Teacher, Framingham, Massachusetts. *Evening Session*—1. Paper: What Constitutes a Practical Course of Study in our Graded Schools, Edgar A. Singer, Teacher Public Schools of Philadelphia, Pennsylvania. 2. Paper: From Pestalozzi to Froebel, W. N. Hailmann, Editor "The New Education," Detroit, Michigan.

FRIDAY, JULY 16.—*Morning Session*—1. Prayer; unfinished miscellaneous business. 2. Report of Messrs. Joseph A. Paxson, J. P. Wickersham, and J. L. Pickard, the Committee appointed at the Philadelphia meeting of the Association to procure statistics showing what proportion of convicts in prisons and penitentiaries received full or partial education in Universities, Colleges, Normal, High, Grammar, or Primary Schools, public or private, and to report such other statistics as to the relation between education and crime as the committee may deem important. 3. Paper: The importance of having the Primary, Secondary, and Collegiate System of Education fit into each other, President James McCosh, the College of New Jersey, Princeton, New Jersey. *Afternoon Session.*—Department of Higher Instruction—1. Opening Address, Prof. E. T. Tappan, Kenyon College, Gambier, Ohio, President of the Department. 2 Paper: Equivalents in a Liberal Course of Study, William T. Harris, Superintendent of Public Schools, St. Louis, Missouri. 3. Paper: Scholarships, President Josiah L. Pickard, State University of Iowa, Iowa City, Iowa. 4. Paper: Extra Class-Work, Prof. Edward S. Joynes, East Tennessee University, Knoxville, Tennessee. *Evening Session*—1. Paper: The Relations of Educators to Spelling Reform, Prof. F. A. March, Lafayette College, Easton, Pennsylvania. 2. Reports of Committees and unfinished business. 3. Reports from the several States and Territories represented.

The Hon. John Eaton, U. S. Commissioner of Education, the Hon. James A. Garfield, of Ohio, and Colonel F. A. Parker, late Superintendent of the Quincy (Mass.) Public Schools, have been specially invited and are expected to take part in the meeting. The President of the United States has also been invited to visit the Association during its sessions, and will consider the invitation favorably if his public duties will permit.

INTERNATIONAL SOCIETY FOR THE INVESTIGATION OF THE PRINCIPLES OF TEACHING.—*Programme for 1880*—The Society will hold public meetings in the Tabernacle at Thousand Island Park, beginning at 10 o'clock, a.m., Monday August 16th, and closing Saturday, 21st. The following subjects will be presented: I. *Intellectual Education: its Nature, Province and Method.* By Dr. C. W. Bennett, D.D, Professor of History and Logic, Syracuse University, Syracuse, N. Y. II. *Laws of Methods of Teaching.* By Dr. W. T. Harris, LL D., Superintendent of Public Schools, St. Louis, Mo. III. *Moral Education in Public Schools: its Nature, Province and Method.* By Dr D. H. McVicar, LL.D., Principal of Presbyterian College, Montreal, Que. IV. *Art Education in Public Schools: its Nature, Province and Method.* By Prof. M. M. Maycock, Professor of Drawing, State Normal and Training School, Buffalo, N. Y. V. *How hildren Learn to Read.* By Col. F. W. Parker, late Superintendent of the Public Schools, Quincy, Mass., now of Boston, Mass. VI. Prof. W. Payne, A.M., of the Chair of Education, Michigan University, Ann Arbor, Mich., will give a paper, his subject to be announced. VII. *School Government: its Nature, Province and Method,* by Dr. J. H. Hoose, Ph.D., Principal of the State Normal and Training School, Cortland, N. Y.

IMPORTANCE OF PHYSICAL EDUCATION.

PAPER READ BEFORE THE LINCOLN TEACHERS' ASSOCIATION, BY MISS L. DARCHE, OF ST. CATHARINES.

Many and great minds have been occupied in planning and revising our educational system, till we find it one of the most complete in the whole world; yet it is only a one-sided system after all, taking care only of the mind, and leaving the body to take care of itself as best it can; for, while every attention has been paid to the best methods of developing mental capabilities, and some attention to moral development, little or no attention has been paid to an equally important branch of education, the physical.

And what are the results of this one-sided system? We have only to look about us to see them. I have here an account of one result, that I but recently clipped out of the *Globe*: it reads as follows:—

DEATH TERMINATES A PROMISING CAREER.—H. W. ———, first silver medallist of Trinity Medical School for the term which has just closed, died very suddenly at his lodgings on ——— street about nine o'clock on Tuesday evening. Mr. ———, who at his death was twenty-five years of age, had previous to his examination been studying very hard, and the overstrain brought on consumption of a very rapid type. He was too ill to be present at the school when the prizes were distributed, and the medal was taken to his bedside and given to him there. A few hours later life had fled.

Now if, in the education of this young man, this predisposition to weakness of lung power had been noted, and from the first exercises given that would have built up and strengthened this particular weakness, and if, all through his life as a student, attention had been given to his physical culture, so that, as his mind became trained and cultivated, his body had been also developed and strengthened, when the last hard pull came, would he not have been prepared for it, instead of its being the "last straw" to break him down?

How many in our High Schools and Universities are ruining their prospects for a useful and successful life by this almost entire disregard of physical culture? Inherited weaknesses, that might with a little systematic and *persistent* care be overcome, are gaining a greater and greater hold till, when at last the long-coveted goal is reached, the final examination passed, and the real struggle of life begins, the graduate, if he does not break down altogether, often finds himself afflicted with some chronic weakness or disease that will, in a great measure, impair his usefulness for life.

Then look at men who are non-professional business men, men of sedentary habits, how few are strong and hearty, abounding with life and vitality!

Look at our mechanics! Although their work is such that a great deal of muscular action is required—enough, it may be, to insure them good digestion, good circulation and respiration—and in the main they are healthy; yet, as only some of the muscles are called into action, the rest remaining dormant, their bodies are not harmoniously developed; and thus we often find them disproportioned and ungainly.

How do we find the women of the present generation? How many of them do we find physically well developed? Sad to say, their number is even less than that of the men. How many of them, even if they have no chronic disease or especial weakness, have a general feeling of weariness, are "tired from morning till night?" A certain routine of work there is to be done, and it is is done, but not turned off as it might have been, with ease and pleasure, had the education of the body been thought as important as that of the mind.

These, then, are some of the results of the lack of physical culture in our system of education.

Few people appreciate the fact that the body can be trained and developed just as readily as the mind, and that a few minutes daily, if properly employed, will do much, very much, to draw out and strengthen the physical resources.

Everyone knows, if one arm be tied up and not used for a

month, and the other used vigorously during that time, what the result will be—which will be the stronger, the used arm, or the unused arm. So it is with all the muscles of the body—*use them and they will strengthen.* Emerson's rule that "in all human action, those faculties will be strong which are used," holds good here; so does Maclaren's, that "where the activity is, there will be the development." And this is easily explained; for exercising vigorously flushes the muscles used with blood, building them up; this calls for a fresh supply of blood, which demand is answered by increased appetite and greater supply of food, the respiration is increased, every air cell in the lungs being filled at least during the time of action; and if the exercise be of the right kind, the shoulders will be forced down into their proper place, the chest raised, and more room given to the stomach, lungs, heart and other vital organs to perform their part; and, as a result of all this, the whole body will be strengthened and invigorated. Who would not spare half an hour, or at least twenty minutes daily for such a purpose?

There are statistics to show that any person under forty years of age, by devoting only four hours a week, can, if he know the suitable methods, develop dormant muscles, straighten crooked tendencies, strengthen and in fact almost make over again the whole body. If so much can be done in the way of physical culture at this stage of life, how much more can be done in childhood, when the muscles are yet unstrained or hardened, and the framework is yet unsettled.

Every child should be taught that his body is of as much importance as his mind, that the one can be trained and cultivated just as much as the other, and that it is essential to his success in life that neither be neglected; he should know all the principal rules of hygiene, and should have instilled into him the importance of following them; he should be made to understand his body and the laws which govern it.

It is true the boy, while he is a boy, does unconsciously in his play hours do something towards this development; but, in our crowded school-yards, with so many active games prohibited, he has not much chance. So then the teacher should take the matter in hand: it is his duty to educate the child, not only mentally and morally, but physically—to educate the whole child, not a part of him; and if it were known how easily, how efficiently, physical exercises may be carried on in school; how they do not detract from the mental work, but help it, freshening the mind, and doing away with much restlessness, how they promote order and discipline, many teachers, if only for the good derived in this way, would be glad to introduce them into their schools.

The method of physical training does not differ very much from that of mental. We all know if we want to educate a child's mind to grasp a chain of reasoning, we first give him two links of that chain, and when he understands just how these links are joined, we give him a third, and when he sees how that is connected to the ones already given, a fourth, and so on until he grasps the whole chain. So, if we want to educate his physical grasp, we must first give exercises suited to the present condition of his muscles, great care being taken not to overstrain any of them; then when these muscles become strong and hardened enough to perform these exercises readily, harder or longer should be given, and so on. Not only should he be trained in this practical way, but he should be made to understand the particular effect of each exercise—how that his body is developed in one direction by one set of exercises, while it will take an entirely different kind to strengthen it in another; how that a movement of one kind will surely make him erect, while the opposite will surely tend to bend him. This knowledge will prove beneficial to him all through life. If he becomes a mechanic, or his life work be physical, he will know enough of his muscular system to at once see which muscles are used and which unused by his work, and he will also know how to counterbalance the effect of this by a little vigorous exercising in the right direction, thus keeping his whole body in a state of harmonious development. Or, if his occupation be a sedentary one, one requiring brain work, how very important the knowledge to him then is, of how to tone up his body and keep it so. We all know that mental labor expends more nerve force and vitality than physical labor, while the habits of life and the work itself are all contrary to the production of this vitality. Then of how very much more importance is an intelligent knowledge of the body and its requirements to the advanced student, the professional man, or any one whose work is chiefly mental.

Other countries are alive to the importance of this branch of education. Sweden stands pre-eminent, having in all her schools, colleges and universities a thorough system of gymnastics. Germany, England, and other European countries, are imitating her good example.

Some of the colleges of the United States advertise gymnasia in connection with their institutions: thus the welcome note of progress in the right direction is being sounded on our own continent.

It will not be long before the educational authorities of this country will see they are defeating their own aims by this perpetual cramming of the intellect and utter disregard of the education of the body, and when this time comes we may then expect a more complete system—one that will educate mentally, morally, and physically. And though we cannot hope to alter this one-sided system, we can, by a practical knowledge of the subject, do much to promote physical development in our own immediate spheres of action; and if what I have said to-day has awakened an interest or desire in any one present to investigate or read up for themselves what can be done in the way of physical education, my object in presenting this subject to the Association will be accomplished.

To those who may be thus desirous for further information, I would recommend as good books the following: "How to get Strong and how to keep so," by Blaikie; "Wear and Tear," by Dr. Mitchell; "Physical Education," by Maclaren; and "Drill and Calisthenics," by Hughes. Out of a multitude of exercises contained in these books, I have selected for daily use in my school, as adapted for the development of the principal muscles of the body, the movements that I now describe, and will afterwards illustrate by the class before us, to show how quickly and how easily physical work can be done in the school-room.

I. Let the children stand single file in the aisles, about six feet from each other. Let the first order be, that all heads and necks be held erect. Once these are placed in their right position, all other parts of their bodies at once fall into place. Now raise the hands directly over the head, and as high as possible, until the thumbs touch, the palms of the hands facing to the front, and the elbows being kept straight. Now, without bending the elbows, bring the hands downward in front towards the feet as far as can comfortably be done, generally at first about as low as the knee, taking care to keep the knees themselves absolutely straight; indeed, if possible, bowed even back. Now return the hands high over the head, and then repeat, say six times. This number twice a day for the first week will prove enough; and it may be increased to twelve the second week, and maintained at that number thereafter, care being taken to assure two things: one, that the knees are never bent; the other, that, after the first week, the hands are gradually brought lower down, until they touch the toes. The end sought in this exercise is to make the pupil stand straight on his feet, and to remove all tendency towards holding the knees slightly bent, and so causing that weak, shaky, and sprung look about the

knees, so very common, to give way to a proper position."—*Blaikie.**

II. "Let the pupils now stand erect. Raise the hands above the head as before, elbows straight, till the thumbs touch. Now, never bending the body or knees a hair's breadth, and keeping the elbows unbent, bring the hands slowly down, not in front this time, but at the sides just above the knees, the little finger and the inner edge of the hand alone touching the leg, and the palms facing straight in front. Now notice how difficult it is to warp the shoulders forward even an inch. The chest is out, the head and neck are erect, the shoulders are held low, the back vertical and hollowed in a little, and the knees straight. The whole frame is so held that every vital organ has free scope and playroom, and their healthier and more vigorous action is directly encouraged. If steadily practised, it is one of the very best known exercises, as it not only gives strength, but a fine, erect carriage."—*How to Get Strong.*†

III. "ARM AND CHEST EXERCISE. *One*—Hands clenched and thrown forcibly back as high as the shoulders, elbows near the sides, nails to the front. *Two*—Throw them as high as possible. *Three*—Bring them back to the shoulders as in *One*. *Four*—Bring them to the sides. Continue 1, 2, 3, 4, at least five times. The whole exercise should be performed with considerable energy."—*Hughes' Drill and Calisthenics.*

IV. "TO EXPAND THE CHEST AND SET THE SHOULDERS BACK.—*One*—Raise the arms quickly from the sides, palms of the hands meeting with a clap, as high as the forehead, and at the full extent of the arms. *Two*—Throw the arms back forcibly, elbows close to the sides, forearms perpendicular, palms to the front, fingers extended, chest well forward, and waist drawn back."—*Drill and Calisthenics.*

V. *Position*—Arms akimbo, whole body erect, raise heels off the floor till the whole weight of the body rests on the soles and toes of the feet. *One*—Now, being careful to keep the heels well up, bend the knees gradually, bringing the body down in a stooping posture, as low as possible, taking care to keep the back straight all the while. *Two*—Now rise till the knees are straight, never letting the heels come down. Repeat six times twice a day for the first week, and double that number the second week, and maintain at that. This exercise strengthens the muscles of the feet and legs, giving firmness and elasticity to the step in walking.

"It is of the utmost importance that pupils should maintain a correct position while engaged in calisthenic exercises."—*Drill and Calisthenics.*

I would say, in conclusion, that for the past ten months I have gone through the above set of exercises twice a day; that it only takes ten minutes of school time—five in the morning and five in the afternoon; and that the results of that ten minutes' work are greater and more marked than that of any other ten minutes work during the day.

To those who wish a happy school, a quiet school, a progressive school, I say, "Try it."

GOOD BEHAVIOUR.

BY HON. J. W. DICKINSON.

The statutes of the Commonwealth require the teachers of the public schools to give instruction in good behaviour, as well as in what are known to be the common branches of study.

While the ordinary topics of school work are provided for in all our schools, there does not seem to be any systematic attempt to train the pupils to that state of mind and propriety of conduct which constitute good behavior. Teachers and school authorities are too often satisfied if the ordinary lessons are learned, and good order during school hours is observed. These two results are not enough for a course of instruction to produce, nor enough to meet the demands of an intelligent, thoughtful public. Character is of more consequence than learning, and the power of self control is superior to the ability to conform to school rules under the eye of a teacher.

When we consider how much of virtue there is in good behavior, we shall at once see the importance of introducing the subject as an essential element in our systems of education. Good behavior as an object of culture must not be confounded with good manners or with politeness. By good manners are meant those external forms of conduct which express a sense of the proprieties of life. Politeness is a gracefulness of manner which denotes a desire to please others by anticipating their wants and wishes, and by avoiding whatever may give offence. Good behaviour is that propriety of conduct which indicates a purpose to do what ought to be done.

One may have good manners, and be wanting in those mental states out of which they should spring. Politeness is the product of good early training, and a natural inclination to be agreeable. True politeness must have something in the mind of its possessor corresponding to it. Good behaviour includes good manners and politeness, and adds to both an element by which a sense of duty is expressed.

Good manners attract our attention, and generally limit it to what we may observe. Politeness also pleases us with its forms; but we derive a higher pleasure from a thought of what it denotes. Good behaviour holds an inseparable relation to goodness, and we value it because it is a sign of good character.

With this explanation of the nature and value of good behaviour, there will be suggested the manner and importance of its cultivation. It appears that manners may be obtained by imitation, while behavior must be produced by an appeal to the moral nature. The teacher, therefore, who would train his pupil to behave well, must direct his attention to the moral quality of his acts.

The child must be led from the first to perform those outward acts which are the natural expressions of right states of the mind; for such acts have a tendency to produce the states they express, and they lead the mind to form good habits.

A few simple, just rules of conduct should be given, and a prompt, cheerful, and thorough conformity required.

Truthfulness is the soul of good behavior. In the application of the rules of conduct will be found the opportunities to cultivate the spirit of truthfulness.

As the young learn most readily from example, the teacher must be a good model of integrity. His school must be free from all those devices by which its real character is misrepresented. The marks which denote scholarship and conduct must be carefully and impartially made. Arbitrary rewards and punishments are to be applied when hope and fear have failed to secure conformity to school regulations; but, when applied, they should be adapted in kind and amount to add a proper incentive to good, and a proper restraint to bad behavior.

A truthful spirit predisposes the mind to exercise feelings of respect for superiors, to have a proper regard for authority, to be grateful for favors received, and to be inclined to make sacrifices, if necessary, that others may be made more happy or more prosperous.

The teacher should observe his pupils with a watchful care, that he may know when the selfish principal of action begins to give place to that higher principle, *self-love*, which leads one to reject an immediate good whenever a choice of it subjects him to the loss of a greater remote good. At this stage of the pupil's progress, present rewards and punishments may be withdrawn, and he may be trained to undertake the control of himself. He will not be able yet to do this always from a sense of duty,—the highest principle of action; but he may be influenced by an intelligent notion of what will contribute to his own future well-being on the whole.

Great mistakes may be made in the moral as well as intellectual education of the young, by undertaking to train them in classes, without taking hold of the individual members, and arousing in each the principles of action that impel to good behavior.

The machinery of rules and regulations, with their associated rewards and penalties, are too frequently placed between the living

* This is part 4 of the First Extension Motion, in "Setting up Drill."—ED.

† This is part 2 of the First Extension Motion, but the hands do not start properly from above the head. This is a most important exercise in all its parts.—ED.

soul of the teacher and the unfolding moral nature of the pupil. Conformity may be secured by the application of external means; but obedience is the product of a higher principle than that to which rewards and penalties appeal.

Some teachers stand apart from their pupils, and hold no personal relations to them. Wholly absorbed with their schools as institutions, they leave the individual pupils belonging to them, to be taught and controlled by the systems of teaching and government they have established.

The pupils study, and are in order, while the system is upon them; but they recite and move in classes, without entertaining a notion of their personal responsibilities; and when the school-hours are over, and they are away from the sensible presence of rules, they show by their behavior that they have been restrained, but not educated. Neither the spirit nor power of self control is in them, nor have they been put in the way to make it a possession.

On the other hand, there are teachers, who, believing the schools to be institutions for the formation of character, and that character is formed by individual effort stimulated by the contact of one mind with another, deal with their classes as though they were composed of individuals. Such teachers study their pupils for a knowledge of the peculiar wants of each; and they hold such relations to each, that all feel themselves to be in the constant presence of sympathizing leaders who are skilfully directing them to the ends they seek.

The secret of Thomas Arnold's success in moulding the character of his pupils is found in his deep love for them. He entered heartily into all their amusements, as well as into their mental occupations. He brought his own cultivated mind near to theirs, and awakened in them a love for truth and good conduct, and a disposition to depend on themselves for success. The result was that every boy who graduated from his school went away into life, bearing with him something of the spirit of his great teacher.

If the young are the subjects of right influences at home and at school, they will early come to act from a sense of duty. After that, they will often judge incorrectly, and their youthful spirits will often urge them into indiscretions, but their general purposes will be right, and experience will fortify them against yielding to temptation.

Those who limit their study of persons to that which may be observed through the senses are apt to form a low estimate of the young. They think that those who philosophize over youthful tempers, for principles of action to guide them in the management of the young, will find their philosophy vanishing as soon as the children present themselves for control. Faith as well as knowledge is required to encourage a teacher to form his plans out of his philosophy, and apply them patiently with his eye fixed on future rather than on immediate results. All successful teachers have been philosophers.

Dr. Arnold owed his success as a teacher to the insight he had into the inner life of his pupils, and to his knowledge of the springs of human action. From these sources he derived the idea that it is not enough for a teacher to work for his pupils: he must live with them, and inspire them to work for themselves, with that manner and spirit which are the elements of good behavior. If all teachers should thus live with their pupils, they would know their abilities and dispositions, and be able to save them from those disastrous consequences which are quite sure to fall upon those who are cut off from personal relations with their governors, and are left to be controlled by an inanimate system of rules and regulations. Whenever a pupil is found wanting in any of the virtues or graces that adorn private character, or contribute to the well-being of society, he should at once be subjected to that special instruction which will train him out of his defects. If he is found inclined to practise deception in any of its forms, he must be put to living in accordance with the truth, and under such circumstances that he will soon see the beauty of integrity. Should he exhibit a selfish spirit, he should be required to perform generous acts until he can find pleasure in bestowing favors on others. If he is affected by any vice, it must be displaced by introducing its opposite virtue; and his virtues must be strengthened by attaching to them their proper rewards.

These things are never accomplished except by those who have an intense love for others, and are able to make a persistent application of those personal influences that have a tendency to root out what is evil, and strengthen what is good.

In connection with the virtues, there must be taught by personal means, also, those graces of manner which satisfy the requirements of a cultivated taste. Propriety of manner and purity of heart have a reflex influence on each other. Purity is an end; good manners are a means to be used in securing the end, and is also the result which the end is likely to produce.

The young are influenced by living examples rather than by precepts or by argument. They imitate those whom they love and respect, and, under favorable conditions, will grow to be like them. It is possible that the teachers of the Commonwealth are too exclusively occupied in keeping good *order* in their schools, and in teaching the topics arranged in their courses of studies.

They will fail of attaining the high ends for which our schools were established, if they lose sight of the important duty,—that of cultivating good behavior,—which the statutes of the State, and an intelligent love for the well-being of the children, both demand.

In selecting teachers for the schools, too much care cannot be taken to choose those persons who by nature and education are fitted to train the young to a virtuous life, and to those proprieties of conduct which best express the conditions of such a life. In addition to this, the supervisors of the teachers should prepare for them as complete courses for the moral training of the young as those now provided for their intellects, and they should require them to be applied with the same fidelity. Then we should see intelligence and virtue growing up together, each shedding its lustre on the other.

If the teachers of the Commonwealth fully appreciate that "good behavior," in the sense in which the Fathers used it, includes those elements of character, and those proprieties of manner, which are essential to every good citizen, then our schools, if they be secular, will be secular in no low sense. If they consider that in good behavior the Fathers meant to include "the principles of piety and justice, and a sacred regard to truth," then our schools will in no sense be godless, but will be nurseries of those "virtues which are the ornament of human society, and the basis upon which a republican constitution is founded."—*Report of Massachusetts' Board of Education.*

PROMOTION EXAMINATIONS—MARCH, 1880.

COUNTY OF PERTH.

JOHN M. MORAN, INSPECTOR.

ENTRANCE TO FIFTH CLASS.

DICTATION.

1.—At first we imagined that it only proceeded from some magazines to which the Russians, as usual, had set fire in their retreat. Eager to know the cause of this conflagration, we sought in vain for some one who could tranquillize our restless curiosity; but the impossibility of satisfying it redoubled our impatience and increased our alarm.

2. Melancholy, campaign, difference, immense, commodities, asylums, victims, insatiable, incendiary, massacred, chisel, humorous, jingle.

3. The baker is in need of a man to knead his dough.
He shot the hart through the heart.
All the poor cobbler had was his awl.
The two deer which he bought were considered too dear.
New editions, with additions, are in preparation.

Value 50. 5 marks off for each error. Write at once on paper.

WRITING.

Will be judged from this paper. Value 40.

READING.

Fourth Book. Page 239. "The inhabitants..... .....buried with them."

Value 50. Expression 15. Fluency 35.

ARITHMETIC.

1. How much will it cost to carpet a room 21 ft. 4 in. long and 16 ft. 8 in. wide, with carpet 2 ft. 8 in. wide, at $\$1.37\frac{1}{2}$ per yard?

2. What part of a cord of wood is a pile 6 ft. 4 in. long, $3\frac{1}{3}$ ft. high, 20 inches wide?

3. What fraction of 4 chains is $3\frac{1}{2}$ rods?
4. Reduce 18 lbs. 10 oz. Avoir. to Troy weight.
5. What will 1830 lbs. of hay cost at $9 per ton?
6. Find the price of 3 loads of barley each containing 56 bu. and 20 lbs. at $\$0.56\frac{1}{2}$ per bu.
7. Find the interest $712.40 for $2\frac{1}{2}$ years at $2\frac{3}{4}$ per cent.
8. Divide $\cdot 01295$ by $\cdot 12\dot{3}$.
9. Divide $\frac{1\frac{3}{4}}{4\frac{1}{2}}$ by $\frac{2\frac{1}{3}}{2\frac{1}{4}}$.
10. A cistern has 3 pipes which will fill it in 10. 20, and 40 minutes. In what time will the three pipes, running together, fill it?

Values 10 each. Time—2 hours. Full work required.

GRAMMAR.

Values.

32 1. Analyse :—
With the fleetness of thought now *commenced* a *race that had* ostensibly *for its object* the *recovery* of the lost ball, and *in which he who had driven* it with resistless force *outstripped* them *all.*

32 2. Parse the italicized words in the above sentence.

10 3. Give examples of the different kinds of attributive adjuncts, underlying the adjuncts.

12 4. Correct, give reasons.
Many have profited from the misfortune of others.
If there was better management there would be security.
After Columbus made his preparations he set out on his voyage of discovery.
Who do you think I saw to-day?

8 5. Give the double plurals with difference in meaning of—brother, genius, penny, cloth.

6 6. Give the feminine of nephew, Sultan, negro; and the possessive plural of who, lady, hero.

100 Time—$1\frac{1}{2}$ hours.

GEOGRAPHY.

Values.

5 1. Describe the physical features of Australia on the coast, and in the interior.

10 2. Name all the British colonies and dependencies in the Eastern Hemisphere, giving the position and chief towns of each.

5 3. Name all the countries lying between the Russian Empire and British India.

14 4. In sailing along the coast from the mouth of the Seine to the Dardanelles which are the most noted cities and the most striking objects you might see? Give the position, and a short description of each.

16 5. Draw a small map (3 inches wide by 5 inches long on the border) of England, locating thereon the Capes, Bays, four Rivers, and the Cities of London, Liverpool, Leeds and Bristol.

20 6. What and where are Tay, Galway, Dronthem, Snowdon, Transvaal, Atlas, Melbourne, Valparaiso, Hillsborough, Odessa.

70

HISTORY.

10 1. Give a short account of the ancient Britons.

10 2. What were the causes and the consequences of the struggle between the Houses of York and Lancaster?

5 3. Give the events which took place on the following dates, 1282, 1588, 1688, 1745, 1776.

15 4. Sketch the life of the Duke of Wellington.

40 Time—$1\frac{1}{2}$ hours.

ENTRANCE TO SIXTH CLASS.

DICTATION.

Travellers are inexhaustible in their admiration of the gigantic masses of ruin of the temples, avenues of columns, obolisks, colossuses, and catacombs in which the district abounds..... This stupendous ruin is connected by an avenue of colossal sphinxes, standing at intervals of ten feet from one another..... The portico of the temple is generally regarded as the greatest specimen of Egyptian architecture..... The walls of the apartments and chambers are decorated with statues and figures in relief painted over with brilliant colors.

Illuminate, liquefy, maritime, obloquy, dilapidate, Avoidupois.

Value 60. 5 marks off for each error. Write at once on paper.

WRITING

Will be judged from the Dictation paper. Value 40.

READING.

Fifth Book. Paper 139. "This important document..... have been based."

Value and marking as in preceding classes.

ARITHMETIC.

1. Find the sum, difference and product of $3.45\dot{6}$ and $.42\dot{5}$.
2. What would be the proceeds of a note of $150.00 for 90 days, bank discount being 8 per cent.?
3. *A* owes *B* $300, to be paid as follows : $\frac{1}{3}$ in 3 months, $\frac{1}{4}$ in 4 months and the rest in 6 months; what is the equated time?
4. $500 Stratford, 25th March, 1879.

Seventy days after date, for value received, I promise to pay W. E. Jones, or order, five hundred dollars with interest at the rate of eight per cent. per annum, till paid.

JAMES SMITH.

Endorsements: April 15th, 1879, $95; May 2nd, 1879, $140. What is to pay when the note is due?

5. What must be paid for stocks paying 5 per cent., that the investment may return 8 per cent.?
6. What sum must be invested in stocks at 112 paying 9 per cent. to obtain a yearly Income of $1260?
7. I sold a horse for $\frac{1}{2}$ of $2\frac{5}{8}$ times the cost: what was the gain per cent.?
8. A pond of 5 acres is covered with ice 9 inches thick. Find the weight of ice in tons, if a cu. ft. of ice weigh 865 oz. Avoir.?
9. Find the square root of .00734449.
10. What must be the side of a square which shall contain 10 acres?

Values 10 each. Time—2 hours. Full work required.

GRAMMAR.

Values.

28 1. Analyse :—
To a certain degree the *virtues* of the ancients *ought to inspire* emulation, and are *worthy* of being *precedents* to all posterity; but that soft *charm which* a pure religion and more liberal notions *diffuse* over Christian manners, that animating *prospect* which is now held *out to encourage* laudable endeavors, and those terrors which are denounced against nefarious actions, *could* not *operate* on classical ages, because *they* were *unknown.*

32 2. Parse the italicized words.

18 3. Correct the following, if necessary, and quote the rule of syntax violated :—
The rapidity of his movements were beyond example.
How beautiful it looks.
His argument was the best of all the others.

The book laid on the floor.
The river has overflown its banks.
Who are you looking for?

8 4. Form verbs from—alien, fertile, just, public; and adjectives from—fame, notice, aim, defy.

10 5. Point out and give the meaning of the roots, prefixes and affixes of the following words:—homicide, facility, fugitive, supposition, subjunctive, inanimate, attributive, disturbance, refraction, correspondence.

4 6. Give the plural of—courtesy, genus, beau, madame.

100

COMPOSITION.

25 Write—(not less than twenty lines)—an account of "The Past Winter in Canada," enlarging on the agreeable and disagreeable features; the advantages and disadvantages of such a winter.

Time 1½ hours.

Values. GEOGRAPHY.

10 1. Describe as accurately as you can the position of the equator in regard to the Continents, Oceans, Seas, Gulfs, Islands, &c., over which it passes.

10 2. There is a group of islands situated in about West Longitude 155° and North Latitude 20°, and a large island in East Longitude 140°, and South Latitude 25°; what are their respective names, and in what direction does the group lie from the large island?

10. 3. Enumerate five great physical differences between the Old and the New World.

10. 4. Describe the Basin of the Nile, and mention any remarkable phenomena observed by travellers therein.

4 5. Name four Islands in the British Channel.

6 6. Describe the Gulf Stream, its causes and effects.

10 7. Draw a map of Africa, South of the Equator, locating thereon the countries, mountains, rivers, lakes, capes and towns.

60

HISTORY.

10 1. What great man died in prison at St. Helena? Give a sketch of his life.

10 2. Give an account and the date of the Battle of Naseby.

5 3. Give the date, reign, and cause assigned for the execution of Mary Queen of Scots.

15 4. Write short notes on Julius Cæsar, the Crusades, Oliver Cromwell, Columbus, and Wolfe.

40

Time—1½ hours.

ALGEBRA, EUCLID AND MENSURATION.

1. Define a circle, a scalene triangle, parallel lines.

2. If two straight lines cut one another the vertical or opposite angles are equal. Prove.

3. Equal triangles upon equal bases in the same straight line and towards the same parts are between the same parallels.

4. Divide $3x^6 + 7x^5 - 12x^4 + 2x^3 - 3x^2 + 13x - 6$ by $x^2 + 3x - 2$.

5. Simplify $\frac{(2x^2 - \frac{1}{2})}{2x + 1} + \frac{1}{2}$.

6. Solve the equations $\frac{5}{x-7} = 6 - \frac{7}{x-7}$.

and $2(3x - 4) - 3(3 - 4x) + 9(2 - x) = 10$.

7. A person bought a buggy, horse, and harness for $300. The horse cost twice as much as the harness, and the buggy twice as much as the horse and harness, find (by an equation) the value of the buggy.

8. Find the area of an equilateral triangle whose side measure 48 yards.

9. A wagon box is 9½ ft. long 3½ ft. wide and eighteen inches deep, how many bushels will it contain, allowing 5 cubic feet, = 4 bushels?

10. The diameter of the end of a cylindrical saw-log is 20 inches and its length 18 ft. What ought it to weigh allowing a cubic foot of it to weigh 35 lbs.

Value 10 each. Time—2 hours. Full work required.

ANSWERS TO QUERIES.

J. W. C., *Almonte.*—He could no. legally do as you propose.

STUDENT, *Woodstock.*—Candidates who wish to attend a Normal School for 2nd class training should write to the Minister of Education.

SUBSCRIBER, *Seaforth.*—(1) The "Intermediate Certificate" is of permanent value. (2) Creighton's Epoch Primer is authorized for use in Public Schools. (3) Candidates must pass the same Professional Examination at the Normal Schools. The optional group selected for the *non-professional* makes no difference. (4) Students in High Schools have options.

D. H. L., *Renfrew.*—First class students will still receive instruction in the non-professional work at Toronto Normal School.

A. P. G., *Lower Newcastle.*—You will be admitted in your turn to the Normal Schcol if you write to the Minister of Education. Instruction is not given in non-professional subjects to second class teachers. If you have a certificate from the New Brunswick Normal School it may be recognized in Ontario by the Minister of Education. You may obtain a copy of the Revised School Law for Ontario by writing to Hunter, Rose & Co., Toronto.

Notes and News.

NOVA SCOTIA.

The Corner Stone of the New Pictou Academy, was laid on the afternoon of the Queen's Birthday, by Dr. Allison, Superintendent of Education. The town was gaily decorated with bunting in honor of the event. The weather was propitious for the ceremony, the earlier heat being tempered by passing clouds, which, shortly after the exercises closed, produced a brief shower. An immense gathering, consisting of upwards of 2,000 persons, witnessed the ceremonial, among which were the resident Clergy, the chief business and professional men and members of both the Dominion and Local Legislatures. During the gathering of the crowds, the band of the Pictou Garrison Artillery battery played appropriate airs.

Mayor McLeod commenced proceeding by calling on the Rev. Mr. Burnett, of St. Andrew's Church, to offer prayer. The one hundredth Psalm was rendered by the band and some four or five hundred children of the schools. Mayor McLeod gave a brief, but interesting, historical address, read a list of the documents and articles deposited as memorials, and called on Dr. Allison to formally lay the stone. This was done in an appropriate manner, and the enterprise was commended to the considerate care and support of the people of Pictou. The band then played "Auld Lang Syne" in response to an invitation from the Mayor.

We take from the Halifax *Herald* the following synopsis of the address subsequently delivered by the Superintendent of Education on invitation of the Mayor:— In his opening remarks, he referred to the matter engaging their attention, as one in whose behalf they might fairly draw on the loyal inspirations of this festal day. The time honored spectacular mode of celebrating Her Majesty's birthday was proper enough, and doubtless did something to stimulate patriotism, but scenic displays of banners and troops did not reveal the true secret of British greatness, nor fairly represent the perfection of British civilization. Our national greatness reposes on a firm basis of popular intelligence and virtue. At least this is our proud belief and boast. Therefore, it might be claimed that the day was best celebrated when its traditional enthusiasm is enlisted

in some cause, or work, which represents the immaterial forces of which our civilization is the product.

He alluded to the educational record of Pictou in early times, and to the great names she has added to our Provincial roll of honor. He did not address those who are just waking up to the importance of education. To suppose so would be an undeserved reflection on a very creditable past. Important as is the advance now being made, it is simply the continuance of a movement coeval with the settlement of the country. He alluded to the faithful, successful labors of Principal McKay and his staff in the old building, and was glad that old principles and methods were not to be discarded, but to operate under more favorable conditions. He complimented the Mayor and Town Council on the wise initiation of a policy which would stand to their credit as long as these walls of solid brick and stone should stand, and longer! Gratification was expressed at the nice adaptation of the new edifice to the purposes contemplated by its erection, and, said the Superintendent, long may it subserve the noble and patriotic purpose of its erection! Long may it testify to those who approach this beautiful town both by land and sea, as it lifts its substantial form amid these surrounding spires, that the people of Pictou place education next to religion in their scale of value.

The particular place of Pictou Academy and such institutions in our educational work was pointed out, and the logic of their utility demonstrated at some length. The speaker discussed also, more fully than we can now report, the proper curriculum for such institutions. He sympathized with current movements in favor of technical education. The peculiar conditions of Nova Scotia were glanced at. She must not thwart the creative wisdom which endowed her richly with the materials of progress and prosperity. To quote Mr. Howe, "Old ocean, not content with clasping her in his arms, has poured his sparkling treasures on her breast." Her hills are ribbed with iron, her rocks are seamed with gold. Fertile fields above, inexhaustible coal strata below. The improvement of these conditions requires peculiar training. Let it be given. The speaker showed that a judicious High School curriculum fits the mind for anything and everything that is good. Many of these studies lie in the exact direction of practical application. Science must be scientifically, not empirically taught. Mathematics is the basis of innumerable practical arts. While this is true, these branches have a high educational value, a quality which they share with the science of language, which the speaker vindicated as worthy of the greatest minds, and as contributing immensely to the progress of mankind. Pictou was to be envied for the possession of an institution where the foundation of a broad and generous culture can be laid.

The public exercises connected with the closing of the collegiate year of Acadia College were held at Wolfville on June 3rd. The large Assembly Hall of the new college building was packed to overflowing. The occasion was honored with the distinguished presence of General McDougall and Admiral Sir Leopold McClintock. The graduating class numbered thirteen. Five of the students were excused from delivering their prepared orations, to afford time for speeches from visitors present. The following was the programme: The Church in England in the time of Henry III., Caleb R. B. Dodge, Middleton; Diversity of Race—Its influence on National Prosperity, Clarence E. Griffin, Canard; *Mohammedanism in the East, Howard Chambers, Truro. Music. Philosophical Speculations—Their Influence on Life, Edward J. Morse, Paradise; *The Literary Profession, Everett W. Sawyer, Wolfville; *Commerce and Civilization, Richmond Shafner, Williamstown; The Permanence of the Poetical Element in Man, Benj. F. Simpson, Bay View, P.E.I. Music. *Literature as subject to the law of Demand and Supply, Samuel N. Bentley, Wilmot; The Statesman and the People, G. J. Coultrie White, St. John, N. B.; *To what extent does the advancement of Science promote Human happiness? Isaac C. Archibald, Upper Stewiacke. Music. Simplicity a test of Thought, G. Wilbert Cox, Upper Stewiacke; The Unrest of the People, George E. Croscup, Granville Ferry; Alius Et Idem—Valedictory, Walter Barss, Wolfville. The General and Admiral delivered brief addresses of appreciation and congratulation. Acadia had during the past year 67 undergraduates. J. Wilberford Langley, Esq., of Halifax, is President of the Alumni Association.

The annual examination for teachers' licenses begins on the 20th inst.

J. T. Mellish, Esq, A.M., Professor of Mathematics in the Halifax High School, has sought relief from his duties for a few weeks on account of indisposition. His place is being temporarily filled by R. J. J. Emmerson, Esq., A.B.

The secretaryship to the Board of School Commissioners, made vacant by the resignation of C. C. Vaux, Esq., has been filled by the appointment of Mr. R. J. Wilson. The Board could not have made a wiser selection.

The Provincial Educational Association meets for its first session at Truro, on the 14th inst. The published programme of exercises indicates an occasion of great interest.

It is understood that the Senate of the University of Halifax is prepared to admit women to its examinations in Arts and Science.

*Excused.

NEW BRUNSWICK.

On the last days of May and the first days of June, Sackville was the scene of the usual enthusiastic gatherings of the friends of the Methodist educational institutions located there. First came the anniversary exercises of the Male Academy, consisting of declamations, reading of essays, music, addresses, and the distribution of prizes. The attendance during the year w as said to have been 52. Dr. Allison, Superintendent of Education for Nova Scotia, in addressing the meeting, said, among other things, that this academy had more of its students in Parliament than all the other institutions in the Maritime Provinces put together.

The public exercises of the Mount Allison Female Academy took place on the 1st of June, when the degree of M.L.A. (Mistress of the Liberal Arts) was conferred on Miss Leora R. Tweedie, of Apohaqui, and a number of prizes were awarded.* The literary and musical performances of the young ladies were greatly enjoyed. Three of the fair students had attended advanced classes in the College, and it was hoped that one would be prepared to enter next year for the degree of B.A., or, as Dr. Kennedy, the Principal, suggested, the degree of Maid of Arts. There were 74 permanent students during the year, 57 of them boarders at the Academy. Much regret was felt at the retirement of the Lady Principal, Miss Whitfield, who is going to Chili, it is understood, to take charge of an institution there. The sum of $50 had been given by Mrs. R. Brecken, to be expended in prizes by the authorities of the institution.

On the same day, the Alumni held their Annual Meeting, when the officers of the society were elected, as follows: President, Dr. Allison; Vice-Presidents, Josiah Wood, A.B., George Smith, A.B., and H. A. Powell, A.B.; Secretary, J. F. Allison; Council, J. L. Black, M.P.P., A. A. Stockton, LL.B., C. A. Bowser, W. F. McCoy, Q.C., and A. J. Chapman, A.B. The following were chosen members of the Board of Governors: J. L. Black and Prof. Burwash. In the evening there was a public meeting under the auspices of the Alumni and Alumnæ Societies, when William Elder, Esq., A.M., M.P.P., editor of the St. John *Telegraph*, delivered the alumni oration, on "Educational Culture in its Enfranchising Influences." A supper, followed by toasts, etc., concluded the day's pleasures.

Wednesday, June 2nd, was devoted to the College Convocation. Among the interesting features were a Latin salutatory address by H. A. McKeown, and orations by the members of the graduating class. The degree of B.A. was conferred upon Messrs. A. J. Chapman, of Dorchester, N.B., S. B. Grigg, of Studholm, N.B., and John A. Smith, of Newport, N.S. The Elocution Prize for ministerial candidates, given by Mr. John Macdonald, of Toronto, was won by Mr. Doane. It was announced that Wm. Elder, Esq., had given a prize of $25 to be awarded by the College Faculty, and one of $10 to be awarded by the Alumnæ Society. An endowment fund of $100,000 is to be raised by the friends of the College, one-half of which has been already subscribed. Josiah Wood, a graduate of the College, and one of the Governors, offers $10,000 towards the proposed new college building, with an additional pledge conditioned on the completion of the endowment.

At the University of New Brunswick, the examinations for degrees were held on the 21st, 22nd, and 23rd of June, and the Encoenial celebration took place on the 24th. Particulars of the latter will be given next month. In the examinations for scholarships and honor certificates, held two or three weeks previously, the following were the successful competitors: *Senior Class.*—Mathematics—J. M. Palmer, the Lorne gold medal and mathematical scholarship, worth $60; 2nd, J. A. McIntyre. Classical and French—A. W. Wilkinson. Metaphysics—C. P. Hanington, A. F. Randolph and J. W. McCready. Geology—C. P. Hanington

*The Alumnæ Mathematical Scholarship was won by Miss Jaffery.

and Murray McLaren. *Junior Class.*—English—J. Fred. Harley, the English scholarship of $60; H. C. Grant, H. V. B. Brydges, D. Fisk, A. D. Macpherson and G. R. Devitt. Logic—H. D. Montgomery, Bliss Carman and E. B. Hooper. French—A. D. Macpherson, G. R. Devitt, E. B. Hooper and J. Fred. Harley. Classics—J. Morrison and Bliss Carman. Mathematics—Bliss Carman. Science—W. S. Carter was successful in obtaining the achromatic microscope. *Freshmen.*—Classics—J. McIntosh and H. J. Taylor, the classical scholarship of $60. Mathematics—W. W. White. Lorne Silver Medal—J. A. Johnson. Science—J. A. Johnson and O. W. Smith. French—E. D. Weldon. English—J. R. Cowie. The Douglas Gold Medal, for the best essay on "The importance to the people of New Brunswick of increased attention to agriculture," was assigned to A. W. Wilkinson, of Fredericton, who also carries off the French prize.

Three Teachers' Institutes will meet on the 8th and 9th of July inst., viz.: at St. John, St. Stephen, and Hampton. At the last named place, the Chief Superintendent of Education is expected to deliver a public lecture on the evening of the 8th.

The Educational Institute of the Province is to meet at Fredericton on the 13th, 14th and 15th inst., when matters of great interest to the profession will be discussed, including a proposed course of instruction for High Schools. All the Inspectors of Schools are expected to be present.

The following order has been issued to the Inspectors, and the Education Department has sent copies to all the Teachers in the Province:—Ordered, by the Board of Education, April 24, 1880: 1. That the following NOTE be appended to Sec. 5 (3) of the Order of the Board in reference to Inspection of Schools (See Educational Circular No. 10), viz.:—NOTE—"If in any case the number of pupils presented for examination should be less than the per centage specified above, the Inspector shall assure himself of the cause or causes of the same; and if he shall be satisfied that the smallness of the attendance arises from causes which are not amenable to the reasonable influence of an industrious and earnest Teacher, he shall proceed to examine the School for classification, and report the facts to the Chief Superintendent for the consideration of the Board of Education." 2. That Sec. 5 (3) (*e*) of the Order of the Board, in reference to Inspection of Schools (See Educational Circular No. 10), be hereby amended to read as follows: (*e*) "The additional grants to Teachers whose Schools or departments receive classification in any year shall be drawn by the Chief Superintendent, at the close of the Term in which they are inspected, and paid in June or December (as the case may be.)"

The Chief Superintendent appends the following notes to the above, under date of June 10, 1880:—"In reference to the Schools examined by the Inspector during the Summer Term 1880, the Inspector will note any Teachers who were in charge of these Schools the past Winter Term, but who have removed to other Schools for the current Term. At the close of this Term, all such cases will be reported to the Board of Education, with a view of securing a Rank for the Schools taught during the Winter 1879-80 by such Teachers. Sec. 5 (3) requires that a School or department shall, on and after November 1, 1880, have been in charge of the same Teacher 'for more than one Term' in order to be eligible for classification." "The Rank reported for any School or department for the Term closed April 30, 1880, is confined to that *Term*. The Rank assigned hereafter (including the present Term) will apply to *the Year* closing with the Term in which the School is inspected."

Considerable interest is being manifested, in the country districts as well as in cities and towns, in putting up pupils for examination by the Inspectors, with a view to certification of the pupils and participation by Teachers and Trustees in the superior allowance. Standard VI is the requirement for country districts, and Standard VIII for cities, towns and villages. It is noteworthy that the existing provisions in relation to the superior allowance are leading to the employment of class-room assistants in many districts. Inasmuch as the Assistants, as well as the Teacher, is pecuniarily benefited by the ranking of the school, it will be seen that it is advantageous for any school to employ an Assistant, whether seeking to participate in the allowance or not. The following NOTE, affixed to the regulations relative to the Course of Instruction, is in point here: NOTE.—"Where the number of pupils enrolled is 50 or upwards, the Class-Room Assistant, if holding a license from the Board of Education and regularly employed at least four hours a day, receives a Provincial grant equal to one-half that provided by Sec. 13 of Chap. 65 of the Consolidated Statutes, for teachers of the same class. It is, however, quite competent to the Board of Trustees in Districts where the number of pupils is less than 50 (it matters not how many less), having first provided a Class-Room for the School-house, to employ an Assistant who has no license. A suitable Assistant could generally be selected from among the best qualified pupils. Under the direction of an efficient Teacher, fair work would be done in subjects requiring drill. The position is one that should be sought by those who intend entering the Normal School to qualify as Teachers. In this way, almost every school in the country districts could easily secure the benefits of a Class-Room Assistant, and so carry on the Course of Instruction through the specified Standard VI, and participate in the superior allowance.

QUEBEC.

A meeting of the Protestant Committee of the Council of Public Instruction was held on the 1st inst. in the Education Office, Quebec. There were present, His Lordship the Bishop of Quebec, the Hon. Judge Day, Dr. Dawson, the Venerable Archdeacon Leach, Dr. Cook, the Hon. Judge Dunkin, the Hon. James Ferrier, the Hon. L. R. Church, Q. C.; the Hon. W. W. Lynch. The Right Reverend James Williams, Lord Bishop of Quebec, was unanimously appointed Chairman of the Committee, in room of the Hon. George Irwin, who had resigned.

Some conversation was had in regard to a proposal made by Richard White, Esq., Montreal, for the publication of a journal of education, but it was felt that nothing could be done in this matter until the finances at the disposal of the Committee are more clearly ascertained.

In reply to a complaint from the School Commissioners of Durham, County of Drummond, in regard to the withdrawal of the grant from the Superior Education Fund for the past year from the Durham or Ulverton Model School, in which complaint it was contended that the annual returns had been sent to the Department of Public Instruction, and the claims of said school to the Government grant for the past year and the continuance of it in future were set forth, the secretary was instructed to say that its claims would be considered at the August meeting in connection with the distribution of the Superior Education Fund.

The Committee unanimously resolved to request the Hon. the Superintendent of Public Instruction to lay the names of the Rev. Thomas Blaylock, B.A., the Rev. William Murray, and John Le Grand, Esq., all of New Carlisle, before His Honor the Lieutenant-Governor in Council, with the respectful recommendation that these gentlemen be appointed members of the Board of Examiners for the County of Bonaventure, and in like manner that of Michael Felix Hackett, Esq., Advocate of Stanstead Plain, that he be appointed a member of the Board of Examiners, Stanstead.

The consideration of the subject of funds available for the expenses of the Committee and the support of a journal of education was referred to the Sub-Committee on the arrears of marriage-license fees, with the request that they report at the August meeting.

The Hon. the Superintendent of Public Instruction was requested to have a fresh supply printed of Forms of Returns from Boards of Examiners to grant Teachers' Diplomas.

A complaint was laid before the Committee that two candidates under the legal age had received Teachers' Diplomas from the Board of Examiners, Aylmer, in May last. The Secretary was directed to make enquiry as to this charge of the secretary of the Ottawa Board of Examiners.

The following resolutions in regard to the proposed bill respecting public instruction were unanimously adopted:—

1st. That this Committee feel it their duty to represent to the Provincial Executive their very strong conviction that it is important the fullest attention should be given to the whole subject of the School Laws of the Province before attempt is made to legislate finally for their consolidation, and with this view they think the measure will require, after discussion, to stand over for next session; and that this resolution be communicated to the Catholic Committee.

2nd. That the Hon. Judge Dunkin, Dr. Church, Mr. Heneker, and Dr. Dawson be a Sub-Committee to consider the bill respecting Public Instruction, submitted to this Committee with reference to its condensation and arrangement, and to the protection and advancement of the interests of Protestant education, and with power to confer with the members of the Government, and with the Superintendent of Education, and to report from time to time to this Committee.

The memoranda of Mr. Heneker on Educational grants and

tables were referred to the Sub-Committee on the Educational Act.

The Hon. the Superintendent of Public Instruction was requested to present to the Government the earnest request of the Committee that a sum of $500 per annum may be placed at its disposal for the purpose of aiding the publication of an educational journal for the special benefit of the Protestant schools. The Superintendent was also requested to mention this resolution to the Catholic Committee.

A deputation, consisting of Messrs. Colby and Holmes, from the Stanstead Academy, and Stanstead Wesleyan Ladies' College, was heard in behalf of these Institutions, urging their claims to a larger grant from the Superior Education Fund. The Committee assured the deputation that the matter would receive their careful consideration when the distribution of the Superior Education Fund was made next August.

Petitions from School Commissioners in the village of Huntingdon and from other School Commissioners in several municipalities of the Counties of Huntingdon, Chateauguay, and Beauharnois, were submitted to the Committee by the Hon. the Superintendent of Public Instruction, praying for the establishment in Huntingdon of a Board of Examiners to grant Teachers' Diplomas. The secretary was instructed to acknowledge the receipt of the petitions from the Superintendent, and to say that they are under the consideration of the Committee.

The Committee adjourned to meet on Wednesday, the 25th August next, or sooner if necessary, on the call of the chairman.

MANITOBA.

The regular quarterly meeting of the Board of Education and of the University of Manitoba took place on 3rd June. The Council made the necessary arrangements for taking the ad eundem degree.

Graduates of Universities within Her Majesty's dominions become eligible for an ad eundem degree by presenting their certificates to the Registrar, and paying the sum of ten dollars.

The Rev. Professor Forget Despatis moved, seconded by Rev. A. Chenier, the following resolutions, of which he had given notice at the last meeting, viz. :

1. That the Board of Studies shall prepare a certain number of questions on each of the subjects of examination determined by the Council.

2. That every year the Board of Examiners shall, in due time, select on each subject a certain number of questions prepared by the Board of Studies, to be balloted, and they shall at the same time determine how many of these selected questions shall be the matter of the present examination.

3. That the Chancellor or the Registrar, or two other members appointed by the Council, shall ballot out of the selected questions the exact number determined upon by the Board of Examiners.

4. That at the time of examination the different papers shall be handed under seal, by the Registrar or any other member, to the person appointed to preside at the examination, in order to be distributed to the candidates in time, as provided by the Board of Studies.

A very animated and lengthy discussion took place upon these resolutions. Subsequently Canon O'Meara moved as an amendment, seconded by the Hon. Mr. Bannatyne, that the whole method of conducting examinations be referred to a Committee consisting of the Chancellor, (the Metropolitan of Rupert's Land), the Vice-Chancellor (Hon. J. Royal, M.P.), His Grace the Archbishop of St. Boniface, Professor Forget Despatis, Professor Bryce, Professor Hart and the mover. The amendment was carried.

An adjourned meeting of the Council was held on 9th June, to receive the report of the Board of Studies upon the university examinations, which commenced on 31st May. The following members of the Council were present, viz., The Chancellor, His Grace the Archbishop of St. Boniface, Rev. Dr. Larrie, Rev. O. Fortin, B.A., Rev. Canon Grisdale, B.A., Rev. Canon O'Meara, M.A., Rev. Professor Hart, M.A., B.D., Rev. S. P. Matheson, Rev. J. Robakon, Rev. W. Cyprian Pinkham, B.D., Rev. Professor Forget Despatis, and the Registrar.

The Board reported that the two medals presented by His Excellency the Governor General had been awarded as follows :—

The silver medal to Mr. W. R. Gunn, of Manitoba College, and the bronze medal to Mr. A. Hibert, of St. Boniface College.

The candidates and a number of their friends were then called in, and the assemblage was addressed by the Chancellor.

His Lordship congratulated the University upon the fact that in the progress of its work, the stage of conferring the first degree had been reached. He was happy in looking back to notice with what very kind and generous feelings the members of the various colleges had united in the work of the University. He might say, on the part of the members of St. John's College, that they felt very deeply the very kind way in which the members of the other colleges had co-operated in the great work that was before them in the establishing of this University. They had had difficulties in the past, and they might expect to have difficulties in future ; but he was sure that if they approached them all with the same loving, brotherly spirit that they had manifested in the past, those difficulties would be smoothed over and would pass away. He thought they had nothing to be ashamed of in the standard they were aiming at in this University. With regard to what was required for the ordinary degree, students who received the first or second class here would probably do the same if they went to any other institution. One of the students of this University had done better at the previous examination of the University of Cambridge last year than he had done at the previous examination here. But in considering the standard required for honors, of course they must expect to find a very large difference between the standard where young men were prepared at about the age of sixteen, and that of the Universities of Oxford and Cambridge, where the students commenced at nineteen or twenty. Besides, there were at these Universities between 500 and 600 fellowships, yielding to each student elected thereto from $1,400 to $1,500 and upwards, about forty of these falling vacant every year. The effect was to draw to these Universities the best students of the other British Universities, who, after pursuing their studies at these, began again as undergraduates at Oxford or Cambridge, thereby attaining a higher standard of scholarship. Hence the standard for honors in these two Universities was not to be compared with that of the other British Universities. The standard for honors in the University of Manitoba would compare favorably with that of the British Universities, excepting the two named. It was a pleasure to observe that the first degree conferred in this University was obtained in honors. His Lordship did not undervalue the ordinary degree ; still, he thought it of the utmost moment that students should, if possible, take up the honor subjects, as their minds would be much better trained by these higher studies. He thought he might express, on the part of the examiners, their very great satisfaction with the results of the examinations generally. The proportion of the students who had entirely failed was very, very small. It was more important that there should be a good average than that a few should do extremely well, while the majority were inferior. His Lordship concluded by reading the list of the successful candidates, with the standing of each in the several subjects.

The announcements that the Silver Medal had been awarded to W. R. Gunn, and the Bronze Medal to A. Hibert, were received with applause.

The Chancellor stated that Mr. Betourney, who had gained such a distinguished place in the study of Moral Science, had received his examination papers in Latin, and had written all his answers in Latin ; so that his examination had been conducted like those of the Universities of the olden time, the custom having in these modern days gone out of use.

Mr. W. R. Gunn is a native of Manitoba, the son of Mr. John Gunn, ex M.P.P. for North St.Andrew's ; and Mr. Batourney is the eldest son of the late Mr. Justice Batourney, one of the Puisne Judges of the Court of Queen's Bench of this Province.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

PRESCOTT.—A very successful session of the County of Prescott Teachers' Association was held at Hawkesbury on the 4th and 5th of June. There were about seventy teachers, and others concerned in the teacher's work, present. The following was the programme: Opening Address, T. O. Steele, I.P.S., President; Object Lessons, E. Robinson, Esq.; Grammar, T. O. Steele, I.P.S.; Composition, A. J. Houston, B.A.; French Address, Rev. J. O. Routhier, P.P.; Geography, Henry Gray, Esq.; Lecture, John Maxwell, B.A., Subject—"Relations of State and Teacher;" Arithmetic, John McCutcheon, Esq.; General Business. Rev. Mr. Philips was present and took part in the work of theAssociation. The following resolutions, among others, were passed: "That this Association take fifty copies of the CANADA SCHOOL JOURNAL for use of members who pay an annual fee of twenty-five cents." "That teachers should have the privilege of retiring from the profession, and being placed on the pension list of superannuated teachers, at the age of fifty, or after having taught

twenty-five years." "That the History for entrance to the High Schools at present covers too much ground, and that it would be better to take up some particular period." "That Henry Gray, Esq., be a delegate to the Ontario Teachers' Association at its next session." "That this Association hold its next session at Vankleek Hill on the 8th and 9th of October next." T. O. STEELE, *President.*

HENRY GRAY, *Secretary.*

SOUTH ESSEX TEACHERS' ASSOCIATION.—The teachers of South Essex met in convention in Kingsville on Thursday and Friday, the 20th and 21st May. A motion was carried to divide the library into sections, and a committee was appointed to devise a scheme in accordance with the motion. On Friday morning the committee reported that the division of the library was beset with so many difficulties, that they would recommend the rescinding of the resolution of the previous day. On motion this was done. The books are to be kept in Kingsville. It was also decided that the Inspector should be empowered to add $150 worth of books to the library. The following officers were elected:—D. A. Maxwell, President; Miss J. Henning, Vice-President; Geo. E. Wightman, Sec.-Treas.; John Henning, Librarian; John Henning and Mat. R. Laycock, Auditors; and B. M. Brisbin, A. Dorsett, Wm. Irwin, D. A. Maxwell and George E. Wightman, Committee of Management. A committee to take into consideration the subject of text books was appointed, and reported in favor of the following books: Elementary Arithmetic, *Kirkland & Scott;* Readers, *Canadian Edition;* Spelling Book, *Companion to Readers;* Advanced Arithmetic, *Canadian Series of Hamblin Smith;* Junior Grammar, *Miller's Swinton's Language Lessons;* Advanced Grammar, *Mason;* Mental Arithmetic, *McLellan, Parts I and II;* Algebra, *Hamblin Smith;* Euclid, *Potts;* History for 3rd class, *Frith Jeffers;* History for 4th and 5th classes, *Creighton's Epochs;* Geography, *Campbell's Elementary;* Copy Books, *Beatty's or Campbell's, revised,* and *Payson, Dunton & Scribner.* The offers of the *Canada School Journal* and the *Hamilton Monthly* were laid before the convention. Several teachers have already paid for the *Canada School Journal* for the year, hence they were not in a position to accept the offer. It was resolved to recommend the *Canada School Journal* as the preferable one for the teachers of this county. At the last meeting of the Provincial Association the subject of its composition was under consideration. It was resolved to request the County Association to express an opinion on the subject. The different plans suggested were explained by the President, and on motion it was resolved that this convention is in favor of the Provincial Associations being composed only of delegates from the county conventions, and that the travelling expenses only of these delegates be paid by the Associations sending them. The Inspector was appointed delegate to the next Provincial Convention. It was resolved to have a competitive examination during the time of the county agricultural exhibition, and a committee was appointed to prepare a scheme and to make necessary arrangements for holding such an examination. Some desire was expressed to have pupils classified according to age, but, on motion, the committee was instructed to classify pupils according to classes as graded in South Essex. School discipline was introduced by Mr. Brisbin, who gave some good thoughts on the subject. Much of the true philosophy of government was included in his remarks. During his remarks, and in the subsequent discussion, the following thoughts were evolved, viz.:—School discipline should be mild, firm, uniform, not arbitrary; a minimum of punishment, other things being equal, shows a maximum of management; self-government should be cultivated; the moral aspect of the government should be carefully guarded; unquestioning and instant obedience should be insisted upon. The Teachers' Home Preparation was introduced by Mr. Irwin, who gave some severe thrusts at those who think they can teach by having sometime looked at a subject, or at a remote time have understood it. During the discussion it was suggested that the preparation by the teacher should be definite, thorough, not on the lesson to be taught to-morrow, but on the following teaching day; studied until it takes such possession of the teacher's mind that he can express his views on it in easy and familiar language; studied until he finds the analogies in it to what the pupils know, or to his purposes in life; studied until he finds such aspects of the lesson as will lay hold of the peculiar views, or prejudices, or weaknesses of the pupils; studied until such illustrations are found as will interest all the children, but excess of illustration should be avoided, lest the mind be taken up with illustration and not with fact; studied until such portions of it as will develop the weaker qualities of the mind can be readily applied for the designed purpose. A teacher should, for instance, on Monday night, study the lessons for Wednesday rather than those for Tuesday, because if the lessons for Wednesday are not well understood, a teacher cannot, on Tuesday, point out difficulties, suggest methods of study, or estimate properly how much should be assigned to the class. Incentives to Study was introduced by Mr. Dorsett, who gave his views at length on the subject. Many excellent thoughts were presented; among the incentives mentioned were: Approbation of parents, friends and teacher; the gaining of an honorable position in the class, or in the estimation of fellow-pupils; the love of excellence; the love of knowledge; the positions that may be gained by the educated; the pleasure derived from duty performed; the gaining of prizes; the approval of God. The prize system was considered at length, the preponderance of argument being against the plan usually adopted. Dr. McLellan, who was present during much of the time of the convention, rendered very valuable assistance in discussing the subjects introduced by the teachers, in addition to those introduced by himself. His discussion on mathematics must be heard to be understood and appreciated. Many of his solutions in algebra were most excellent. Those teachers who were conspicuous by their absence, lost more than they will readily gain from other sources. In reading, the Dr. showed clearly the necessity of carefulness in emphasis, rhetorical pauses, etc., and also how careful we should be to understand the author's meaning. His illustrations were very happy. On Thursday evening the Dr. lectured in the Methodist Church, on "This Canada of Ours," to a large and highly appreciative audience. To say the people were delighted scarcely expressed the feelings aroused, if we may judge by the frequent and hearty applause given during the course of its delivery. Rarely do we find great truths enforced with such acumen, and accompanied with so much mirthfulness as in this lecture. Those who can best appreciate it are those who have listened to it. The chair was very ably filled by Mr. Wm. McCain, Warden o fEssex County. Mr. Misener favored the audience with two songs, which were well received. A motion of thanks to the Dr. was moved by Mr. Smart, Reeve of Kingsville, seconded by Mr. Golden, and carried amid applause. This brought the Dr. to his feet, and for some time he entertained his audience with a most amusing address. This was the most pleasant and profitable convention yet held in South Essex. On Friday evening the Association adjourned, happy to meet, sorry to part, and happy to meet again.

WEST VICTORIA.—The sixth semi-annual meeting of West Victoria Teachers' Association was held at Woodville, on Friday and Saturday, 18th and 19th June. At 9,30 a.m. on Friday, the President took the chair, and gave a brief address on business. At 10:00, Mr. Gilchrist, Head Master of Woodville Public School, introduced "History." From 10:30 to 11:30, Mr. Fowler, H. M. of Little Britain Public Schools, dealt with "Parsing." Mr. Sandison next read his essay "Excelsior." At 2:00 p.m., Mr. Dickson, H. M., of Cambray Public Schools, took up the subject of "Factoring." Mr. Shuttleworth followed with "Parts of Speech." At. 3:50 p.m., Mr. McFaul, Head Master of Lindsay Public Schools, introduced the subject of "Inventive Drawing." On Saturday, Mr. Griffith, of Oakwood High School, dealt with "Mathematical Geography," and Mr. Cundal, of Cameron, with "Map Geography." The following business was transacted: Resolved (1) That a fee of 75c be charged all members of this Association. (2) That this Association subscribes for as many copies of CANADA SCHOOL JOURNAL as we have paid up members. (3) That the library be divided into four equal parts, to be kept a part at each of the following places, Woodville, Little Britain, Cameron, Kirkfield, and that the teachers in these respective localities be librarians. (4) That the next convention be held at Woodville. On Friday evening, Mr. J. L. Hughes, of Toronto, delivered his popular lecture on "Kindergarten," to a highly appreciative audience. R. A. DICKSON, Secretary.

Readings and Recitations.

THE OLD SCHOOLMASTER.

He sat by his desk at the close of the day,
For he felt the weight of his many years;
His form was bent, and his hair was grey,
And his eyes were dim with the falling tears.
The school was out and the task was done,
And the house seemed now so strangely still,
As the last red beam of the setting sun
Stole silently over the window-sill.

Stole silently into the twilight gloom;
And the deepening shadows fell athwart
The vacant seats and the vacant room,
And the vacant place in the old man's heart;
For his school had been all in all to him,
Who had wife, nor children, nor land, nor gold,
But his frame was weak and his eye was dim,
And the fiat was issued at last—"too old."

He bowed his head on his trembling hands
A moment, as one might bend to pray;
"Too old!" they say, and the school demands
A wiser and younger head to-day.
"Too old! too old!" these men forget
It was I who guided their tender years;
Their hearts were hard, and they pitied not
My trembling lips and my falling tears.

"Too old! too old!" It was all they said.
I looked in their faces one by one,
But they turned away, and my heart was lead;
Dear Lord, it is hard, but Thy will be done.
The night stole on, and a blacker gloom

Was over the vacant benches cast;
The master sat in the silent room,
But his mind was back in the days long past.

And the shadows took, to his tear-dimmed sight,
Well-known forms, and his heart was thrilled
With the blessed sense of its own delight,
For the vacant benches all were filled;
And he slowly rose at his desk and took
His well-worn Bible, that lay within,
And he said, as he lightly tapped the book,
"It is the hour, let school begin."

And he smiled as his kindly glances fell
On the well-beloved faces there—
John, Rob, and Will, and laughing Nell,
And blue-eyed Bess, with the golden hair,
And Tom, and Charley, and Ben, and Paul,
Who stood at the head of the spelling class—
All in their places—and yet they all
Were lying under the graveyard grass.

He read the book, and he knelt to pray,
And he called the classes to recite,
For the darkness all had rolled away
From a soul that saw by an inward light.
With words of praise for a work of care,
With kind reproof for a broken rule,
The old man tottered, now here, now there,
Thro' the spectral ranks of his shadowy school.

Thus all night long, till the morning came,
And darkness folded her robe of gloom,
And the sun looked in, with eyes of flame,
On the vacant seats of the silent room.
The wind stole over the window-sill,
And swept through the aisles in a merry rout,
But the face of the master was white and still;
His work was finished, and school was out.

REVIEWS.

FOSSIL MEN. By J. W. Dawson, LL.D., Principal of McGill College. pp. 348, 8vo. Dawson Brothers, Montreal.

Though Principal Dawson is a geologist of the first rank, he is in his religious views strictly orthodox, and in regard to science an uncompromising opponent of Darwinism. In "Fossil Men" he examines carefully the evidence which has been supposed by many evolutionists to furnish proof that man first appeared on the earth long before the date commonly assigned to Adam, and that the human race in the Stone Age was less removed than at present from the brute creation. The point of attack is well chosen. The conclusions of many of the investigators of the early history of man have undoubtedly been too hastily formed, and those of others, though not fairly open to this objection, cannot be considered as completely established. Dr. Dawson, at any rate, has been very successful in discovering and laying bare the errors of the writers whom he combats. The constructive part of the work is, however, less satisfactory. The author's view that a period of 6,000 years affords sufficient time for all the changes which, according to his own admission, have occurred, seems somewhat forced; and his hypothesis that man's inventive faculty was more active at the beginning than at any subsequent time, except, perhaps, the present day, may be well-founded, but certainly is not proved. Much, too, of what he says about the relationships of words and languages would not, we think, be admitted to be correct by Max Muller or Whitney. But the work has, as a whole, greatly raised our previously high estimate of Dr. Dawson's ability and knowledge. It ranks very high, both as a popular exposition of what was already known, and as a treatise embodying the results of original investigations. The charm of the style, the interest of the subject, and the clearness of the expositions would, each by itself, be quite sufficient to make "Fossil Men" worth reading. To these attractions is added this, that it contains a very large amount of information about the North American Indians, and particularly those of Canada, never before published between the covers of a book. This new matter is of so great value that it will undoubtedly cause the work to be much quoted and referred to by subsequent writers. The mechanical execution is good, and a large number of wood-cuts renders aid in the elucidation of the subject.

A COMPLETE SCIENTIFIC GRAMMAR OF THE ENGLISH LANGUAGE, with an Appendix containing a Treatise on Composition, Specimens of English and American Literature, a Defence of Phonetics, &c., &c., for the use of Colleges, Schools, and Private Learners. By W. Colegrove, A.M., President of West Virginia College, New York. The Authors' Publishing Company. 1879. Pp. 362, octavo.

In this pretentious volume there are some things that are original and much that is crude. It fairly bristles with strange terms, and its word, phrase, and sentence charts leave little to be desired in the way of complexity. It contains a good deal of valuable matter, but we can hardly agree with the author, "that one year devoted to the study of this treatise will be worth more to the student than ten years spent on the ordinary books." The mechanical execution of the work is good.

SOME THOUGHTS CONCERNING EDUCATION. By John Locke. Edited by Rev. R. H. Quick, M.A., Trin. Coll., Cambridge. Toronto: Copp, Clark & Co.

Two editions of this work have recently been issued almost simultaneously in England, as a result of the awakening of a deeper interest in professional training of teachers in the old world. Locke is recognized in his native country as one of its most profound writers on educational questions; he is regarded by foreigners, especially Germans, as the only Englishman who has contributed much to the discussion of the philosophy of education. In addition to Locke's "Thoughts on Education" the book contains a critical and biographical introduction, and two valuable appendices; one on Working Schools, and the other on Study. The book is a most valuable one, and cannot fail to be suggestive to the thoughtful teacher.

APPLETON'S READERS; No. 5. New York: D. Appleton & Co.

In September, 1878, we reviewed the first four books of the series which this book completes, and in October of the same year an article appeared in the Practical Department of the JOURNAL explaining the most striking features of these admirable works. The Fifth Reader is a worthy crown for its predecessors. The selections are carefully made, and the work to be done by the pupil is most judiciously selected and accurately prepared. They are arranged at the end of each lesson regularly, and consist of: 1. Spelling and pronunciation exercises; 2. Language lessons on the principles of printed language as found in the lesson; 3. Definitions synonyms, and paraphrases. In addition, copious notes are given on biographical, historical, geographical, scientific and literary allusions; and notes concerning the style and thought of the piece. These notes would form a suggestive study for teachers of advanced reading classes.

A MODEL SUPERINTENDENT. By Rev. H. Clay Trumbull. New York: Harper Bros.

This is not a theoretical work. It is neither a description of an ideal Superintendent, or a statement of the characteristics and attainments which he should possess. Mr. Trumbull could have written a valuable book of either kind. His training and experience eminently qualify him to write with great acceptation on this subject. He chose, however, to exhibit the Model Superintendent in a record of the life of the late well-known and highly esteemed Henry P. Haven, of New London, Connecticut. From the life of this earnest man, successful both in business and in Sunday School work, superintendents, teachers, and all church officers may learn many valuable lessons as to methods, management, and especially in faith and enthusiasm in their work. This book should be in every Sunday School library.

FIRST PRINCIPLES OF POLITICAL ECONOMY.—*By A. L. Chapin, President of Baliol College. New York: Sheldon & Co.* Sample copy 25 cents. This is intended for a text-book in High Schools and Academies. It is admirably arranged for the purpose. The author contents himself with stating principles, instead of advocating theories. In the last chapter, however, the issue between Free Trade and Protection is clearly and concisely discussed. We hope for the time when the students of our advanced schools shall study this important subject. This is one of the best school text-books issued on the subject in Europe or America.

QUESTIONS ON ENGLISH AND AMERICAN LITERATURE. *Davis, Bardeen & Co., Syracuse.* This little work has been issued by these enterprising educational publishers to aid in class drill and private study of the subject of which it treats. The author has three aims; 1. To present the

subject of literature in connection with prominent historical epochs; 2. To make the student acquainted with noted authors and points of interest or importance in connection with them: 3. To name the best known works of leading authors. It will be found useful in these departments.

THE DATE AND CHART BOOK. *Thomas Lourie, London, Eng. 6d.* This little primer is well arranged for a reference book, or for reviewing or calling up in the mind the facts and dates already learned in English, Roman and Grecian history. It gives also a brief synopsis of the characters of the sovereigns of England, and the names, dates and works of the leading writers of English Literature.

REPORTS RECEIVED.

We acknowledge with thanks the following:—

ANNUAL REPORT of the Board of Education and Commissioner of Public Schools of Rhode Island. Thomas B. Stockwell, Commissioner.

PRINCE EDWARD ISLAND, 1879, D. Montgomery, Chief Superintendent.

MISSOURI.—Thirtieth Report, R. D. Shannon, State Superintendent.

MAGAZINES.

The June number of the *North American Review* contains "Popular Fallacies about Russia," by E. W. Stoughton, ex-Minister to Russia; "Divorces in New England," by Nathan Allen;" "McClellan's Last Service to the Republic," by George Ticknor Curtis; "Has the Southern Pulpit Failed?" by Rev. Dr. F. A. Shoup; "Caste at West Point, by P. S. Michie, Professor of Philosophy at West Point; and "Some Interesting Publications," by M. W. Hazeltine. This number closes the 130th volume and 65th year of the Review. During the last few years this magazine has made a most remarkable advance in popular favor. Many of its numbers have passed through several editions, and its permanent circulation has increased more than sixfold. The New York *Sun* says of it: "It is full of masterly disquisitions on the great questions that occupy the minds of the world." The Brooklyn *Times*: "It is the cream of the nation's thought." The Albany *Journal*: "It is the representative of the best American thought and culture." The Hartford *Courant*: "It is interesting from cover to cover." The Boston *Journal*: 'It has not a page which an intelligent reader can afford to skip." The St. Louis *Christian Observer*: "It is a rich feast of intellectual enjoyment." The Troy *Times*: "It is endowed with unprecedented elements of popularity." The Cincinnati *Times*: "No other magazine has such a faculty for getting hold of live, fresh, interesting contributions." The London (England) *Academy*: "It seems to have no difficulty in keeping its position at the head of the periodical literature of the United States."

LITTELL'S LIVING AGE.—The numbers of *The Living Age* for the weeks ending May 15th and 22nd, respectively, contain the following articles: "The History of Rent in England," *Contemporary*; "The Irish Small Farmer," *Fortnightly*; "Personal Recollections of Mary Carpenter," *Modern Review*; "Religion, Achaian and Semitic," by Rt. Hon. W. E. Gladstone, *Nineteenth Century*; "The Suppression of the Templars in England," *Church Quarterly Review*; "Illusions of Memory," *Cornhill*; "Notes on Infinity," by Richard A. Proctor, and "The Dog and its Folk-lore," *Gentleman's Magazine*; "Eleanour," a Tale of Non Performers, *Blackwood*; "The Civil Code of the Jews, *Pall Mall*; "Mr. Brudenell Carter on Short-Sight," *Spectator*; "A Russian Ice-House," *Chambers' Journal*; with instalments of "Adam and Eve," "He that Will Not When He May," and "Verena Fontaine's Rebellion," and the usual amount of poetry. For fifty-two numbers of sixty-four large pages each (or more than 3,300 pages a year), the subscription price ($8) is low; while for $10.50 the publishers offer to send any one of the American $4 monthlies with the *Living Age* for a year, including the extra numbers of the latter, both postpaid. Littell & Co., Boston, are the publishers.

The Contemporary Review for May. (Strachan & Co., 34 Paternoster Row, London), contains the following excellent "Bill of Fare": "The Gospel of Evolution," by Dr. Elam; "International Novelists and Mr. Howells," by Mrs. Orr; "Dr. Littledale's Plain Reasons against joining the Church of Rome," by Thomas Arnold; and a "Rejoinder," by Dr. Littledale; "Daltonism," by Wm. Pole, F.R.S.; "Ideas of the Day," by M. A. Doudney; "The Eleusinean Mysteries," by Francois Lenormant; "Miss Lonsdale on Guy's Hospital," by Dr. Moxon.

The Western (May-June) has been received from H. W. Jamieson & Co., St. Louis. It presents us with some interesting articles: "Sister Brenda," a Poem, by Edgar Fawcett; "A Ghost's Adventure;" "Battle of Wilson's Creek;" "Michael Angelo's Regret" (a Poem), by Helen E. Harriett; "Realism and Idealism," by J. M. Long; "A Thought" (Poem), by Lewis J. Brock; "Frederick Hohenstauffer," by A. E. Kroeger; Book Reviews and Current Notes. Subscription only £2 per annum.

The *Journal of Speculative Philosophy* for April, (by J. Jones & Co., St. Louis), contains, as usual, able articles, some of them of great interest to the teacher. "Schelling and Natural Science," by Ella S. Morgan; "Kant's Anthrogeology," by A. E. Kroeger; "Herman Grimen on Raphael and Michael Angelo," by Ida M. Eliot; "The Science of Education," by Anna C. Brackett; "Ars Pootica et Humana," by John Albee; "The Psychology of Dreams," by Julia H. Gulliver; "Laws of Creation," "Ultimate Science," by Theron Grey; "Educational Psychology," by the Editor, Dr. W. F. Harris; Notes and Discussions and Book Notices.

THE GENTLEMAN'S MAGAZINE for June contains three chapters of "Queen Cophetua," a very good novel by R. E. Francillon; "The Galatea of Cervantes," by James Mew; "The Laws of Speech," by Andrew Wilson, F.R.S.E.; "How Shakspere became Popular in Germany," by Eleanor Marx; "The Fishes of the Great Canadian Lakes," by Alfred Rimmer; "Curiosities of Criticism," and "Table Talk," by Sylvanus Urban, the time-honored *nom-de-plume* of the editor. All the articles are of more than average interest. Lovers of angling will read with delight Mr. Rimmer's account of our fishes and suggestions for their preservation. Mr. Wilson's contribution is an able exposition of his views as to the beginnings of language. "Table Talk" is remarkably good. This magazine deserves to be better known and more read in Canada.

THE POPULAR SCIENCE MONTHLY FOR JULY, 1880.—The July *Popular Science Monthly* is quite up to its usual standard. Its most interesting articles for teachers are a striking article on "The Interior of the Earth," by R. Radau. With the second part, which will appear in August, it will constitute a compact popular report on the present state of knowledge on this interesting question. Professor Tyndall's instructive paper on "Goethe's Theory of Colors" is concluded. "A Vindication of Scientific Ethics," by William D. Le Sueur, is the best exposition of Herbert Spencer's ethical system that has yet been made. "The Coming of Age of the Origin of Species," by Professor Huxley, is a lecture on what has been accomplished in the progress of knowledge and liberality since Darwin published his book in 1859. Professor Muir has a study of scientific evolution entitled "The New Chemistry, a Development of the Old"; and there are a sketch and portrait of the versatile German physicist, Professor Friedrich Mohr. The Editorials, Literary Notices, and Miscellany, are unusually full and varied in the number, which is altogether an excellent one. New York: D. Appleton & Company. Fifty cents per number, $5 per year.

THE MIDSUMMER HOLIDAY SCRIBNER.—The custom of making the February and August numbers of Scribner's Monthly specially attractive has now become a recognized feature of the magazine, and seems to be appreciated by its readers. The August number will contain many interesting features, all of which the editors do not care to announce as yet; but the following are some of the articles which will make up the table of contents of this year's Midsummer Holiday Number: Philip Gilbert Hamerton will contribute an interesting paper on Seymour Haden, fully illustrated, with reproductions of Dr. Haden's etchings, a portrait, etc.; there will be an article on Savonarola, the great Italian Reformer, with pictures by Van Schaick; the first of a series on the localities of Dickens will be given in this number, illustrated by Mr. Charles A Vanderhoof (whose charming work on "The Docks of New York" and elsewhere in Scribner will be remembered), who has been sent on a special trip to England for the purpose; an illustrated paper descriptive of American advertising; an article by John Burroughs on "Our River," with pictures by Mary Hallock Foote; the concluding paper of the series on Canada; an interesting and well-illustrated instalment of "Peter the Great;" a paper by Chas. Dudley Warner; and an original comic operetta, "The Sweet o' the Year," words by Nellie G. Cone and music by E. C. Phelps, will be some of the other features of this number.

ST. NICHOLAS.—They seem to have an odd idea, over in England, of the treatment of children in this country, as will be seen by the following extract from the London *Sunday Times*, of May 9th, 1880: "The American children—boys and girls—go to school together. They are said to be very difficult to manage and both boys and girls are whipped if they do not behave themselves, and they altogether have a somewhat rough time of it. But surely they are better off for magazines than any children in the world. The present number of *St. Nicholas* proves this. How excellent is 'A Talk with Girls and their Mothers,' 'Jack-in-the-Pulpit,' etc., etc. What a quantity of illustrations the number is crammed with! The little Americans need not mind being whipped if they have, every month, such an amusing magazine as *St. Nicholas* to comfort them!"

HARPER'S MAGAZINE.—Readers of *Harper's* might have been excused for holding the opinion that it was as near perfection as it is possible for a magazine to be. They must all have been astounded and delighted on the receipt of the June and July numbers. While its literary merit is quite equal to its best, its artistic work is rapidly improving. The illustrations are simply charming. To name the articles would give no adequate idea of the value of the July number. The sketch of the life of QUEEN VICTORIA by Mrs. Oliphant, with its sixteen illustrations, is worth more than the price of the magazine to Canadians.

Publishers' Department.

W. J. GAGE & CO.'S MANUALS FOR TEACHERS.

As certain interested persons have attacked the Manuals which we have issued, we deem it right and fair to show the readers of the JOURNAL how these books have been received in other countries. We therefore make

selections from opinions expressed concerning them by *nearly every educational journal* published in England and America, and by several distinguished teachers. It will be remembered that these are the opinions of unprejudiced men, and therefore entitled to respect. The same cannot be said of the statements of a mere hired scribbler, paid to do the bidding of unscrupulous masters.

MISTAKES IN TEACHING: by Jas. L. Hughes. Toronto: W. J. Gage & Co. London: W. Kent & Co.

This little work, written by a Canadian Inspector of Schools, is intended to point out for the benefit of young teachers the more common mistakes made by those inexperienced in the teaching art. They are arranged under four heads—mistakes in school management, mistakes in discipline, mistakes in method, and mistakes in manner. They are *clearly presented and distinctly expressed*, and cannot fail to be useful to any young teacher who has not heard them from his master at school or a lecturer on school management at a training college.—*The Schoolmaster*, organ of the National Union of Elementary Teachers, England.

There are only three educational papers in America which are issued weekly. The following are the opinions expressed by them concerning "Mistakes in Teaching:"

This is one of the suggestive books of *special adaptation and value to teachers* who aim to improve their methods of managing and teaching their schools. Mr. Hughes evidences in this little manual the good results of earnest observation, and *a thorough study of the philosophy of instruction*, and shows practically how to avoid the mistakes young and inexperienced teachers are liable to make. In this book he has condensed an immense amount of sound advice. *We advise every teacher to invest fifty cents in the purchase of this useful volume.—New England Journal of Education.*

It will help any teacher to read this book and find out his own mistakes, with a view towards correcting them.—*New York School Journal.*

The chapters here presented were first published in the *Canada School Journal*, and quite *generally republished by the educational journals of the United States.* They have been regarded as embodying good sense and wise counsel for teachers. Only long experience and careful observation could furnish an author so fully with material for sound advice and timely caution. In four successive chapters, covering 111 pages, the author gives direct and practical counsel in regard to school management, discipline, method and manner. All young teachers will find the book a *help in their work*—one of the *best to be had.—Educational Weekly*, Chicago.

The following are from the American Educational Monthlies:

This is one of the most readable books of the kind that I have yet seen. It is evidently the fruit of much *careful observation and a sound philosophy.* Even old teachers may learn something from it, or at the least, may have the satisfaction of having their theories confirmed, or their practices approved. But for young teachers *I know of no book that contains in the same compass so much matter directly bearing on their work, and capable of being immediately utilized. They cannot make a better investment of fifty cents.*—HON. M. A. NEWELL, State Supt. of Education, Maryland, in *Maryland School Journal.*

This book will prove of *material service to the young teacher.* Mr. Hughes has spent many years in practical school-room work, and he here presents the results of his experience in a manner calculated to do much good. One of the first things for the young teacher to learn is "how shall I avoid ruts and mistakes;" and a careful reading of this little volume will go far towards solving the question."—*The Teacher*, Philadelphia.

This little book is the work of a gentleman who is in a position to note teachers' mistakes, and he has evidently taken advantage of his opportunities. *This work is of great value to teachers, because it is eminently practical. It is the most readable book for teachers that we have seen lately.—Teachers' Advocate*, Pennsylvania.

This little book is as full of suggestions as an egg is of meat. *We know no book of the size that contains so many valuable suggestions for teachers, young or old.—Educational Journal of Virginia.*

It is not always pleasant to be told of our mistakes, yet no teacher can ultimately succeed who does not habitually see and correct his own mistakes. The little book under consideration treats the subject under four heads, Mistakes in Management, Mistakes in Discipline, Mistakes in Method, and Mistakes in Manner. *It contains more hints of practical value to teachers than any book of its size known to us.* Our teachers would find in it many helpful hints.—*Ohio Educational Monthly.*

This is a common-sense book, designed to correct common errors in school-room work. It is seldom that in the space of 111 small pages *so many valuable and practical hints are found. It might with profit be read aloud at teachers' meetings everywhere; in fact it is a sort of Teachers' Looking-glass.—Barnes' Educational Monthly.*

Our readers are not wholly unacquainted with this book, as most of the articles have appeared in our columns lately, taken from the *Canada School Journal*, at the time they were published. We know of no book containing more *valuable suggestions* to teachers.—*Central School Journal*, Iowa.

It is sensible and practical.—School Bulletin, Syracuse, N. Y.

Our Chautauqua friend, Mr. Hughes, has packed *a great deal of sound sense* into the one hundred and eleven pages of this little manual.—Dr. VINCENT, in *S. S. Journal*, New York.

Though brief, it is *most comprehensive.* In a clear and forcible manner it points out the errors that are constantly being made by young and even by experienced teachers, in "School Management," "Discipline," and "Method," and shows how the innumerable rocks on which many drift, and which are the cause of so many failures, are to be avoided.—*The Evening Mail*, Halifax.

I have read it through, and I am very much pleased with it. The thoroughly *practical* nature of the hints given in it is its very best feature, and that which must commend it as *a most useful book for our young teachers*—many of the works on "Teaching" available at present are filled with vague generalities which confuse rather than aid the teacher. I have been the more interested in the book from the fact that it treats of matters which, over and over again, I have brought prominently before my students in lectures.—J. A. MACCABE, M.A., Principal, Normal School, Ottawa.

I have never seen a book of more practical value to the teacher than Mr. Hughes' "Mistakes in Teaching," a copy of which you sent me in connection with my subscription to the JOURNAL. I have loaned it to several of my teachers, who have expressed a wish to procure a copy. *At what rate can I procure Twenty-five copies?*—B. B. SNOW, Superintendent of Schools, Auburn, New York.

The following letters speak for themselves:

"I can give no higher testimony for "Mistakes in Teaching" than the fact that on my submitting it to the Board of Protestant School Commissioners for the City of Montreal, I was instructed to procure copies for all our schools, for the guidance and instruction of the teachers."

S. P. ROBINS,
Supt. Protestant Schools, Montreal, and Prof. of Education, McGill Normal School.

"I cannot better express my estimate of the value of "Mistakes in Teaching," than by stating the fact that, on reading it, I at once resolved to present a copy to every teacher under my inspection. I have since been pleased to learn of their high appreciation of the work."

THOS. HENDERSON,
Public School Inspector, Paris.

The book was also adopted by the School Board of the City of Auburn, N. Y, and purchased for every School under its jurisdiction; and an order for a thousand copies was recently received from one firm in the Southern States.

HOW TO SECURE AND RETAIN ATTENTION. By J. L. Hughes. Gage & Co., Toronto. Kent & Co., Paternoster Row, London, Eng.

Here is a Canadian teaching us how to teach. We are very glad to welcome his volume, which is on an important subject, and is *admirably executed.* One of the most difficult things, as all teachers know, is how to secure attention. Imperfect teachers had better buy this book, which gives, so to speak, directions for self-measurement.—*Educational Times, and Journal of the College of Preceptors, London, Eng.*

We can *unhesitatingly commend* it to the notice of teachers as a brief, but satisfactory, exposition of the kinds and causes of attention, its conditions, and the means of obtaining, securing, and developing it.—*School Guardian*, issued by the National Society of England.

The following are the opinions of the three great American educational weeklies:

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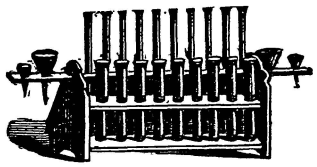

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The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

TEACHERS' LEGISLATIVE COMMITTEE.

Rev. John Rodgers, Vice-chairman of the London School Board, has recently inaugurated a movement in England, which is certain to produce important educational results. At his invitation a conference on questions of Public Elementary Education was held on the 2nd July, at the Vicarage of St. Thomas Charterhouse, London. The programme of subjects for consideration at the preliminary and at subsequent meetings included The Cost of Education; Compulsory Education up to the age of 14; the Inadvisability of Half-time; Compulsory Evening Education for Boys over the age of 16, for Technical Education, Languages, Science, &c.; the Code; Individual and Class Examination; the Fourth Schedule; Graded Schools; the Pupil Teacher System, ought it to be retained, and if so what Modifications are necessary? the Necessity for Centre Teaching; Training Colleges, their denominational character, a Conscience Clause, and is the number of Training Colleges adequate? Non-resident Training Colleges.

Head masters and members of School Boards were invited, and some members of Parliament were present. The object of the Conference was to discuss living educational questions with a view to securing practical legislation in regard to them. The meetings are to be held twice a year; before the Education Department prepares its annual code, and in the spring after the Educational Bill has been submitted to Parliament. Would it not be well for the Ontario Teachers' Association to appoint a Committee on Legislation? If such a committee were formed, representing fairly the various sections of the profession and the Province, no government could afford to treat its recommendations lightly. If the Grangers are to give their views on the teacher's duties, it is surely time for those who know most about the educational affairs of the country to make their opinions known. It is unfortunately true, that teachers have too often been treated somewhat cavalierly by our legislators, but this is the result of want of organization, and a diffidence in expressing their views in a decided manner. If the Association becomes representative, the teachers of the Province could easily be united into one body through the local Associations, and they could then compel a respectful deference to their views.

PHYSICAL EDUCATION.

We are glad to note that England and France are taking a more decided interest in physical training. In this they are merely following in the wake of Germany, Sweden and Denmark. The London School Board has recently re-engaged Miss Lofving, a Swedish lady, as superintendent of physical education in girls' schools.

At the beginning of this year a law was passed making gymnastics an obligatory subject of instruction in all French boys' schools. A minute of M. Jules Ferry has been recently published, laying down directions for the carrying out of the law. "Gymnastics," says the Minister of Public Instruction, "are an indispensable complement of scholastic instruction. In secondary schools, and primary normal schools, they already form part of the regular course; but in village schools, owing to the difficulty of finding instructors, they are only partially adopted. In future the schoolmasters themselves will be held responsible, and must qualify themselves for teaching gymnastics, either by the study of the Government manual, or by attending classes to be held during the holidays, in the capital of the Department. The Government will supply apparatus at 20 per cent. below cost price; but it is pointed out that free gymnastics, perhaps the best course for young children, do not require apparatus. Four lessons of half-an-hour are to be given each week; in the open air if the weather is fine—in a covered court or building, provided by the Mayor, if wet. The lessons are never to be given directly after a meal."

The London *Journal of Education* recommends the systematic introduction of gymnastics into the Public Schools of England as a subject for the consideration of Mr. Mundella.

REMEDY FOR FORMALISM IN STATE EDUCATION.

Apropos to the meeting of the Provincial Teachers' Association, it may be well to consider one or two questions in regard to the working of a State system of education, which thoughtful men among ourselves, as well as in England, have frequently pondered and discussed.

All admit the necessity of some organization for the promotion of education. Four forms of this organization are possible, 1st. a purely voluntary, as in the case of the religious denominations; 2nd. an official or State system, as in the case

of Russia and other autocratic countries. 3rd. a union of the voluntary and State system, as in England and other European countries by a state and local system ; 4th, a governmental and municipal system combined, as in Canada.

With the knowledge that all human systems are inherently imperfect, it becomes a question with educationists which of these four educational organizations would in its practical operation be most free from this inherent imperfection, and which, by a judicious system of " checks and guarantees," would reduce the evils of this imperfection to a minimum. The voluntary system we are compelled to dismiss as impracticable in a mixed community like ours. The second, or purely official system, is alien to our institutions. The third involves somewhat of a contradiction—since the State system must necessarily, by its fixed laws, embarrass, if not forbid, the freedom which is characteristic of a voluntary system. (This evil is now being felt in England.) The fourth is therefore the only one that is practicable among us. Of the operation of this system, in its relation to the State, we have now had large experience, and can, therefore, discuss without prejudice or feeling, some of the defects which it is alleged adhere to such a system.

The question of flexibility in education has been frequently raised in the United States—a country in which an official or State system combined with the local, has, perhaps, of all other countries the fullest scope and means for the freest development. The flexibility which is there permitted, the lightness of State control, which is nevertheless supplemented under official sanction by the constant discussion which every part of the school system undergoes at Teachers' County and State Conventions are, in so democratic a country, its greatest safeguards. With us the case is to some extent different. Like the English system, ours in Ontario is in its legal requirements somewhat rigid, and owing partly to the absence of official participation in convention meetings is wanting in flexibility and freedom. Under these circumstances, the opinions of recent English writers on this subject are valuable. What these opinions are, may be gathered from a spirited article on " *State Education* : *A Help or Hindrance* ?" by Mr. A. Herberet, in the July number oi the *Fortnightly Review*. Mr. Herbert says :

" At present we have one system of education applied to the whole of England. The local character of the school boards deceives us, and makes us believe that some variety of freedom of action exists. In reality they have only power to apply an established system. They must use the same class of teachers ; · · · · the children must be prepared for the same examinations and pass in the same standards. · · · · Now if any one wishes to realize the full mischief which this uniformity works, let him think of what would be the result of a uniform method being established everywhere—in religion, art, science, or any trade or profession. Let him remember that canon of Mr. Herbert Spencer, so pregnant with meaning that progress is difference. Therefore, if you desire progress, you must not make it difficult for men to think and act differently ; you must not dull their senses with routine or stamp their imagination with the official pattern of some great department. · · · · If, for example, a man holding new views about education can at once address himself to those in sympathy with him, can at once [as in the case of the new departure in education at Quincy, Mass.] collect funds and proceed to try his experiment, he sees his goal in front of him, and labours in the expectation of obtaining some practical result of his labour. But if some great official system blocks the way, if he has to overcome the stolid resistance of a department · · · · it becomes unlikely that his energy · · · · will be sufficient to inspire a successful resistance to such obstacles."

Mr. Herbert, writing from an English standpoint, puts an extreme case which is not likely to have its counterpart in Canada ; but the principle of flexibility and freedom which he discusses, commends itself to every well-wisher of our school system. England has differed educationally both from the United States and Canada in one important particular. Until recently he has not brought to bear the potent and salutary influence of educational conventions and associations in aid of the successful administration of her school system. These conventions can, when wisely and judiciously conducted, be turned into potent instruments for good in suggesting improvements in the details and machinery of our school system. They can also prevent that antagonism and friction in its working and administration which must necessarily take place when the judicious counsels of experienced educators have no recognized voice in the state, or are unheeded by those who are practically responsible for the growth and prosperity of the educational system in their hands. We trust that the present Provincial Convention will prove a highly practical and successful gathering of earnest educators.

ONTARIO TEACHERS' ASSOCIATION.

The Twentieth Annual Convention of this important body will be held in the Normal School Hall, on Tuesday, 10th of August, and the two following days. The meeting promises to be one of unusual interest. There are several professional subjects on the programme which are of great practical importance, and the subject of Recent School Legislation is to occupy the attention of the general Association as well as the Public School Teachers' section. The question of the constitution of the Association will be decided, and will doubtless provoke a very animated discussion. We hope that an equitable basis for a representative association may be adopted.

—The question of " Conduct at School " and general instruction in manners is being sharply agitated in some parts of Scotland. The descriptions given of the behaviour of the boys in many districts would seem to warrant some decided action. It is useless to expect the schools to do all the moral training of the rising generation, or even the major part of it. The home should do most of the theoretical and practical teaching of good behaviour and good morals. Nevertheless, the schools have a vast influence over those who attend them, and the

teacher who does not place training of the heart above the training of the head, is certain not to attain the grandest results possible. A committee of the Greenock School Board has been investigating the matter, and have called for reports from their teachers concerning it. One of them states the causes of the rude conduct of boys to be: "(*a*) Hereditary instinct—*perfervidum ingenium Scotorum*, blended in Greenock with the *mobile ingenium Celtarum*; (*b*) rough family life; (*c*) slackness of parental control (we may often observe children on the street at late hours); (*d*) the early age at which lads begin to earn and handle money; (*e*) the rough style of athletic sports now in vogue; (*f*) the frequency and somewhat rough nature of electoral gatherings in Greenock; (*g*) a certain kind of literature supplied to juveniles in penny numbers; (*h*) frequent gatherings of children under inefficient control; (*i*) want of sufficient police supervision; (*j*) rough employments." Some of these causes are worthy of the attention of teachers; and parents would do well to see that their children are kept free as far as possible from their baneful influence.

—Many teachers may be interested in learning the salaries of the teachers of the Elementary Schools in Ireland. The following are the rates now in force—they constitute "the fixed salaries," in addition to which the teachers receive payments on the results of the annual inspection:—"Male teachers—First class, first division, £70 a year, being an increase of £12 a year on old scale; the old second division of first, £60 a year, being an increase of £10 a year on old scale; the new second division of first, £53 a year, being an increase of £9 a year on old scale; the old first division of second class, £46 a year, being an increase of £6 a year on old scale; second class, new scale for first and second divisions, £44 a year, being an increase of £6 a year on old scale; third class, £35 a year, being an increase of £3 a year on old scale; assistants, £35 a year, being an increase of £3 a year on old scale. Female teachers—First class, first division, £58 a year, being an increase of £10 year on old scale; the old second division of first, £50 a year, being an increase of £8 a year on old scale; the new second division of first, £43 a year, being an increase of £7 a year on old scale; the old first division of second class, £37 a year, being an increase of £5 a year on old scale; second class, new scale for first and second divisions, £34 10s. a year, being an increase of £4 10s. a year on old scale; third class, £27 10s. a year, being an increase of £2 10s. a year on old scale."

—The reaction in regard to the "education pressure" agitation seems to have set in in England. Dr. Payne has recently delivered a lecture in reply to those who hold that pupils in the public schools are *over*-wrought. The following quotation fairly represents his opinions: "As regards the schools in this country for boys of the upper and middle classes, it can hardly be maintained that undue intellectual pressure generally prevails in them. Such a statement respecting the average Public School boy would be treated as a joke. Dr. Bridges, in the discussion on this subject at the Social Science Association, gave his own recollections of school life at Rugby, and the work, as he describes it, is certainly anything but severe. English boys in general show a most valuable power of resistance against attempts to make them work too hard, and a happy elasticity of mind, which recoils after repression; so that, though it would of course not be impossible to stimulate them to excessive intellectual work, the task would be a difficult one." The conclusion which seems to be generally arrived at is, that while in some private schools for girls who have ambitious parents, and who are not allowed to take sufficient exercise, the brain work may be excessive. In the great majority of schools the injury to the health of pupils comes much more from bad ventilation than from over-work.

—Lord Norton succeeded in passing a motion in the House of Lords, by a large majority, which, had it become law, would have confined the subjects taught in the Public Elementary Schools to very narrow limits, and would have prevented the clever boy from making progress, in case his parents were poor. It is therefore cheering to know that there is a Minister of Education in England who has backbone enough to stand up against even a large majority of the august House of Lords. In reply to a question by Mr. Samuelson, Mr. Mundella said: "It is not the intention of the Government to strike the specific subjects out of the Code for the school year 1880-81. (Cheers.) But I wish it to be understood that we leave ourselves absolutely free to deal with the entire Code before the time comes to lay a new Code on the table of the House. (Hear.) I may say generally that there is no intention on the part of the Government to lower the standard of elementary education, or to diminish reasonable opportunities for obtaining it. Our aim is to extend to the whole population a thoroughly sound and efficient elementary training."

—The new code introduced by Earl Spencer and Mr. Mundella makes several changes which, although referring to matters of detail, are of vital importance. They refer mainly to compulsory education, and our readers may get an idea of the stringency of the law in regard to this question in England from the following summary of the provisions recently introduced. These are the leading points of the Bill, as briefly stated by the *Schoolmaster*:—

Compulsory Bye-laws everywhere.
Employers to be prosecuted for employing *any* child who ought to be at school.
Bye-laws to be paramount.
Out-door pauper children to be subject only to the same law of attendance as other children.
Employment certificates made identical with bye-law exemptions, up to 13 years of age.

—The School Boards in England do some queer things. One of them expelled a girl from school because her parents would not allow her to take part in sweeping the school-room.

The Department compelled the trustees to admit her, however. Another Board refused by a majority of six to one to meet the Inspector for a brief consultation on school matters when he was visiting their school: "They knew their own business." Dr. Richardson's work on Temperance was authorized as a reader in one place, on condition that it be "read without comment."

—The nomination of Gen. Garfield, from Ohio, gives that State the reputation of providing the presidents for the Union. Teachers in that State do not now regard it to be prudent to whip an Ohio boy, lest they be guilty of the sacrilege of punishing a future president of the United States, knowing that in their old age he might therefore refuse them the small boon of a post-office.

—A novel method of compelling a girl to stop talking was recently adopted in Southwark. A teacher, after trying various methods without any good result, at last got a piece of "sticking plaster" and forced it on the girl's mouth. It was an effective remedy, but the teacher was fined 9s. and costs for her action. The fine was made light because the teacher had previously been kind in her manner towards her pupils.

—The English law is so strict with reference to sending a pupil on the public examination day that the father of a pupil in Canterbury Road Board School was fined for not sending him on the closing day, June 16th.

Contributions and Correspondence.

EDUCATIONAL PROGRESS.

BY DAVID ALLISON, LL.D., SUP'T. EDUCATION, NOVA SCOTIA.

The *diffusion* of education is perhaps the most striking phenomenon of our age, distinguishing it more sharply and vividly than anything else from past epochs. It is not necessary to recur to the genesis of the movement, which has issued in so magnificent a result, nor to analyze the forces which have co-operated in its production. The battle has been fought and won. Men of intelligence and station can now be found with difficulty who will affirm that a state of ignorance is the normal and desirable condition of the masses. It is no longer denied by any reputable authority that all property is fairly liable, at least within certain limits, for the education of all. Those who still retain a degree of sympathy with the spirit of obsolete, or obsolescent, systems, and would like to do some sort of battle in their behalf, find themselves compelled to work with masked batteries from behind the convenient cover of the "three R's." These are the people who say (in *deed*, if not in *word*) if we must have a generally diffused education, let it be of a low order, of the most elementary type.

If the question be asked in what direction it is desirable that the current of educational reform or progress should now set, I must unhesitatingly answer, in the direction of an internal improvement of the schools. "Education for all" should now, as a watchword, be succeeded by "Education good enough for all." So long as it can be said with any degree of truth that special schools, with no higher grade or pretensions than any given class of our free public schools, turn out, to use a rough phrase, better work than the latter, so long there is a reproach upon us, of which we should labor to clear ourselves. For myself, I believe that a claim of this kind is often put forth most unwarrantably. It is sometimes urged when there has been no comparison of really analogous work, and could be none. It is too frequently admitted on the *omne ignotum pro magnifico* principle. It is not often, I think, justified by fact. However this may be, our schools in their respective spheres and classes, should be prepared to do, each its own work, so that none can do the same work better, nor so well. They can reasonably be asked to vindicate their utility by reference not simply to their general function as educational instruments, but to the special quality of the education which they impart. Their products should be good as well as abundant.

It may be asked if this is not the consideration which now determines the educational policy of all countries sustaining a national system of education. Are not new securities for the efficient management of our schools almost daily taken? Do not legislative enactments and departmental instructions alike look towards, as it were, *binding* the teacher to the faithful performance of his duties? Nay, to go further back, is not the constant drift of effort towards the provision of more competent teachers? I answer these questions of course in the affirmative, as I note these indications with pleasure. The jealous care with which free communities guard their public institutions by legitimate precautions and oversight shows that these institutions are properly valued. "The good and faithful" teacher has nothing to fear from the most rigid inspection of his work. All that pressure extracts from "the slothful servant" of the public is "clear gain." But this is not my point. There is no service like willing service, and I wish to show that the position of teacher in the public schools is pre-eminently a position in which a man of elevated sentiments and proper moral habitudes is brought under the play of inspiring motives. He who feels that in the communion of his profession he is moulding the national character and determining the national destiny, does not, it seems to me, lack inspiration to high and honourable effort as compared with the favored teacher of a "select" school. In our adjustments and readjustments of educational machinery, made necessary from time to time by the principles of progress itself, let us aim to strengthen rather than weaken everything which tends to exalt his calling in the teacher's own estimation, to repress the sense of mere mechanical operation, and to present the teacher to himself as one who, whatever be the links which foster him to a general system, has a sphere to fill, and a work to do which afford ample scope for the peculiar forces resident in his own personality. On the realization of this ideal depends in part, in my opinion, the true progress of education.

FROM PESTALOZZI TO FROEBEL.

BY W. N. HAILMANN.

(Address delivered before the National Educational Association at Chautauqua, on the 15th of July, 1880.)

The connection between Pestalozzi and Froebel is so intimate, they are in several respects—although following wholly different methods—so nearly allied in principles and aims, that many still look upon Froebel as a mere modifier of Pestalozzi, and accuse one of his greatest creations—the kindergarten—of being only "a kind of object-teaching." This is not astonishing in superficially in-

formed laymen, or in those of our profession who know one or the other or both only from hearsay; but it challenges our serious reflection to hear similar remarks from men and women who stand deservedly high in the educational world, to notice that men, to whom all look with admiration, see in the kindergarten only "sub-primary schools," that they use it in a schoolish way, and measure its efficiency only by its direct effects on the school-attainments of children.

This misapprehension of Froebel's work finds an easy explanation in the fact that, as a whole, the educational world is still struggling towards Pestalozzi. Seeing Froebel through the veil of Pestalozzi's great achievements, they have no conception of the wide stretch beyond, that separates Froebel from his teacher. Thus, stationed on the earth's surface, we see the moon, the planets, the stars, the milky way—all, apparently, in the same plane, and have no conception of the immense distances—the years of light—that lie between them.

Happily, this need not discourage the disciples of Froebel; for, in spirit, Pestalozzi and Froebel are one. Both were equally animated by a great love of mankind, and by a steadfast faith in the highest ideals of humanity; both held, that in the recognition of truth and beauty, in the practice of justice and love, the march of mankind is of necessity ever onward. Hence, Pestalozzi's light must needs lead to Froebel. This is conclusively shown in the fact that a great majority of Froebel's warmest advocates have reached him through an equally warm advocacy of Pestalozzi. Nay, it is shown in the very fact that those who are still struggling to reach Pestalozzi, see in Froebel only his pupil, his disciple.

It cannot be my purpose, then, to depreciate those who eagerly follow in the wake of Pestalozzi's progress towards Froebel, much less to depreciate the great master himself. On the contrary, by concentrating Froebel's higher and purer light on Pestalozzi's achievements, I would aim to render these clearer, more attractive, more convincing, so that those eager followers of the "father of popular education" may the sooner become equally eager *conscious* followers of the "discoverer of childhood."

Considering the work of Pestalozzi objectively, *i. e.* without reference to the subjective springs of his wonderful activity, we find that its educational value centres in the recognition of all-sided development in the growth of the individual, and, perhaps, of the race. The recognition of this principle led him to insist upon the necessity of activity on the part of the child, as the essential condition of development, since only by their exercise can the faculties be developed; it led him to oppose cramming, since the educator can create nothing in the child, he can only superintend the development of the inborn faculties; it led him to the importance of training as opposed to mere instruction and precept; it led him to the importance of *early* training, inasmuch as during the first stages of development the faculties are most in need of protection and guidance; it led him to acknowledge and extol the mighty influence of the mother in the work of education, and her peculiar fitness for this work; it led him to respect in every child the advanced humanity of which it gives rich promise, and which alone he thought worthy of the educator's efforts; it led him to base all instruction and all training upon the child's own sense-impressions, proceeding from the known to the unknown, from the near to the remote, from the whole to the parts, from particulars to generals, from perception to reflection, etc., as indicated in his so-called laws of object-teaching with which all are familiar; it led him to the alphabet of perception, since in form, number, and language—unphilosophical as this may appear to us now—he saw the ultimate germs of all knowledge, which must first be well rooted and made strong in their simplicity, before they can support a complicated system of branches, and bear foliage and fruit.

It is true that his practice was in very many respects behind his theory, nay, in some respects even opposed to it. Thus, the activity which he induced in his children, of repeating, parrot-like, whatever happened to strike him as suitable and desirable; the long lists of words—meaningless to the children—which he had them to memorize, were far from favoring a healthy development of the intellectual faculties. Similarly, the object-lessons in their English and American form—although not strictly Pestalozzian—the very refinement of cramming, has been lauded by well-meaning advocates as antidotes to cramming. Again, although urging the need of training, he instructed so much, and so incessantly, when with the children, that he gave them no opportunity to exercise their own productive faculties; for, surely the mere repetition of the master's words is not an exercise of productive faculties. Thus, it would be easy to show that, in his practice, he habitually infringed upon his own laws of object-teaching, and was continually confounding his alphabet of perception; so that it has been well said that Pestalozzi's greatness lies more in his aims than in his personal method.

The shortcomings of Pestalozzi, in his personal method, are due, on the one hand, to the power of heredity, which, acting as a sort of mental inertia, compels us to move (though, possibly, with decreasing velocities) in the directions in which our ancestors moved, in spite of better insight: on the other hand, to the force of surroundings, whose current will draw our conduct away from our aims with a directing power: in other words, it is due—as I have shown elsewhere—to the law of personal equation, applied on an extended scale to our lives, and the life of the race as a whole. When we view Pestalozzi's struggle in this light, our admiration for his steadfast adhesion to his aims, in spite of the weighty obstacles of his nature and his time, and the shortcomings of his personal method, is vastly increased. We then see in him a man who loves truth more than himself, whose faith in her ultimate success is never shaken by his own failures in her service. There is scarcely a moment in our lives when we may not be sustained, encouraged, elevated by so beautiful an example. Perchance, too, we will learn, from this circumstance, the lesson that it is safer to follow good men's aims than to follow their personal practice, a lesson that might be read with profit by many of the so-called followers of Froebel, who, in aiming to follow the man, lose sight of his high aims, and sooner or later become entangled in sterile formalities, or fall easy victims to any system or tendency that will pretend to patronize Froebel. Men and their practices suffer with the faults and evils of their time; besides, they are fleeting, and do service for a period only; but their aims, inasmuch as they lie in the direction of truth, partake of the immortality, the irrepressibility and infinity of truth,—they are for all times.

Is not this proved by this wonderful Pestalozzi? No one, according to his own confessions and self-accusations, could be fitted for carrying out his lofty aims. In all his practical undertakings he failed, failed ignominiously; and yet, by his aims alone, which he never doubted, and never forsook in all his adversity, he marks the greatest epoch in the history of education, and stands out a shining monument of the power of truth and love. If these can accomplish so much with so weak an agent, what would they not accomplish if they should take equally full possession of one of our giants in practical skill!

It is a remarkable fact that Froebel, who supplemented Pestalozzi's work and placed it on a broad and sure foundation, was also deficient in skill in the practical affairs of life; although—thanks to his clearer mind and wider culture—he excelled as a teacher, and carried out his own principles in his work with the children. He, too, had a hard struggle with life, and met with frequent re-

verses, that must have crushed him, had he not been upheld by a faith and singleness of purpose as great, as steadfast, as Pestalozzi's. Ridicule, persecution from Church, State, and School, pecuniary losses, the estrangement of friends, had no sting for him; his unfaltering faith in ultimate success sustained him in all trials and tribulations.

Froebel, in speaking of the difference between himself and Pestalozzi, says: "All my means of culture I formed from an idea; therefore, I begin with a type of unity (the ball)." And further on: "I am in pure contest with Pestalozzi; he started from the misery and want of poverty, from external conditions; I, on the other hand, from the internal, from my own peculiar view of life, hence from an idea." These propositions contain the key note of his advance beyond Pestalozzi; although, in the second proposition, this is clouded by a strange misconception on his part. It is true that the external motive of Pestalozzi lay in the misery and wants of the poor peasantry of Switzerland; but it is equally true that he was led to his work by an internal motive, by an exalted idea of the worth of humanity, and of its unity with all being. All ideas indicate but the more or less general drift of experiences, and of aims which, themselves, spring primarly from experiences, whether they be received directly, or indirectly through instruction or through the channels of heredity. Thus, Froebel, like all men of his calibre, was in truth led in his work by an idea based on "his peculiar view of life;" but he, too, like Pestalozzi, was primarily moved by an external impetus which he indicates clearly enough when he points to the miseries and wants of the educational practices of his time.

On the other hand, it must be admitted that Froebel attended more to his internal motive, his idea, than was the case with Pestalozzi, who was predominantly conscious of his external purpose, the relief of misery; and to this extent, Froebel offers, indeed, a contrast to Pestalozzi. His view of life, however, scarcely deserves to be called peculiar, since, as will be seen directly, it is the view which philosophers and teachers of mankind have at all times urged more or less clearly and completely. But his intentness upon his idea was peculiar, and to this may be ascribed also the peculiar clearness and completeness with which he apprehended his view of life and gave expression to it in his educational work.

Froebel sums up his view of life and of the object of education in the following words: "In all things there lives and reigns an eternal law. This law is enounced with equal clearness and distinctness in nature—the external,—in the spirit—the internal,—and in life—which unites the two.—This all-controlling law is necessarily based on a living, all-pervading, energetic, self-conscious, and—hence—eternal unity. This unity is God.—The divinity that is in each thing, constitutes its essence. It is the destiny and life-work of man, as an intelligent, thinking being, growing into consciousness, to a pure and unsullied, free and spontaneous representation of the inner law, of the divine in him.—The recognition of that eternal law; the insight into its origin, its essence, into the living connection among its effects; the knowledge of life in its totality,—is science: and, referred by conscious, thinking, intelligent man to its representation and accomplishment in himself, it is the the science of education.—Education must lead and guide man to a clear insight into his own nature, to peace with nature as a whole, and to unity with God: hence, it must elevate him to a knowledge of himself and of mankind, to a knowledge of God and of Nature, and to the pure and holy life to which such knowledge leads." And elsewhere: "Education must lead the child, must lead the man to unification with life in all directions; it must lead him to full unification with his kind, with his neighbor, with society; it must lead him to the greatest possible unification with nature and her laws; it must lead him to an indissoluble unification with the principle of all being, the alpha and omega of all life—with God."

On this broad and secure platform, made for all time, and for "all men, good and true," whatever may be their subjective ideas of God, Froebel placed himself; these ideas he held fast in all his work. It will be noticed, on closer scrutiny, that they contain nothing new, nothing that had not been deemed "pure and holy" long before his time; and yet, uttered by him, they seem like a new revelation. What is it that gives his utterance of them this peculiar charm? It is the fact that he first translated them fully, clearly, consistently into life, and into the work of education. Thereby be made them the common property of mankind, and invested them with a new and strong interest to many who had heretofore looked upon them as having merely theoretical value, and as the privilege of the favored few. Similarly, James Watt, by translating the world's knowledge of steam into practical life, and Morse, who did the same with the world's knowledge of electro-magnetism, appear as greater benefactors of mankind than those on whose shoulders they stand, and who, while recognizing the principles involved, failed to make them readily available for purposes of practical life; and many who gave no heed to the powers of steam and electro-magnetism while they were in the hands of theorists and bungling inventors, now greeted them with grateful admiration as the discoveries of Watt and Morse.

Let us look at the consequences of this view of life in the master-mind of Froebel. Deriving all things from an all-embracing unity, which he calls God, he holds that "it is the special destiny and life-work of all things to unfold (or evolve) their inner essence, to reveal the divinity that is in them." This implies evolution, the *development* of Pestalozzi intensified, made more living, as it were, by a clear and distinct conception that it is not merely growth of strength through exercise, but development, from within outward, of an inborn tendency, pervading the whole being, toward an infinite ideal that leads ever upward.

In man, as an intelligent being, this special destiny and life-work is exalted by the demand that he "is to become clearly conscious of his essence, his destiny and life-work, and to accomplish it in perfect spontaneity and freedom;" and it is made the business of education to secure this. While, therefore, with Pestalozzi, he looks upon activity on the part of the child as the essential condition of its evolution, Froebel labors steadily and effectually to make this evolution free and spontaneous, to arouse that *voluntary* activity which alone deserves the name *self*-activity. Pestalozzi induces the child to do what *he* wants it to do, in the way that *he* deems best, and with an aim which he alone can comprehend; Froebel, on the other hand, teaches the child to do effectually what *it* wants to do, in a way that seems agreeable to the child, and with aims fully its own,—taking care, in a chiefly guarding and guiding activity, directed mainly to his example and the suggestive influences of surroundings, that these aims and purposes lie in the direction of his divine ideal.

This protects him effectually against cramming, against which Pestalozzianism has proved inefficient even in the work of its founder. It is true, it must be admitted that there are also many so-called kindergartens, labelled Froebelian, in which cramming of the worst sort is practised; but this can be ascribed neither to Froebel's doctrine nor to his example. The persons in charge of these kindergartens either have had no opportunity to learn more than the merest outside of his work, or have failed in their apprehension of his teachings: they are, if they are earnest in their work—still struggling towards Pestalozzi, or entangled in the contradictions between aim and execution which his name implies.

Again, with Pestalozzi, Froebel was led, by his view of life, to the importance of training as opposed to mere instruction and precept. For Pestalozzi, however, this training was important only in so far as it strengthened certain faculties involved; while with Froebel it was practice in the art of giving expression to the inner self, in the art of accomplishing "destiny and life-work," in "complete living." Pestalozzi would train his pupils to see what *he* sees, to hear and feel what *he* hears and feels, to understand things as *he* understands them, to express them as *he* expresses them, always judging their perfection by its resemblance to his own. Froebel trains his children to give expression, in word and *deed*, to their own notions and ideas of things, so that, on comparing their representations of their ideas of things with the things themselves, they may themselves discover and correct misapprehensions and deficiencies, and learn the wholesome art of self-criticism; he trains them to use their powers in such a way that with the scantiest stock of material they may accomplish their purposes, that they may learn to be always the architects of their own happiness and dispensers of blessings to all around; and he tests their perfection by the agreement between their expressions and their own ideas, by the amount of joy which their activity brings and gives, so that he has for each child a special criterion, and new criteria for each advanced stage of evolution.

Like Pestalozzi, Froebel insists upon the importance of early training; but in this, too, Froebel rises from the crude views and hasty directions to the higher level of clear insight, distinct purpose, and calm, full control of means. Pestalozzi, indeed, speaks with his peculiarly intense enthusiasm of the mothers of Appenzell, who, during the first week of the child's life, suspend a large and brilliantly colored paper bird over the cradle before the eyes of the child, and of the eagerness with which the child struggles with hands and feet to reach the motley gewgaw: but, in his directions to the mother, he fails to obey the insight gained, and—confining himself with his usual one-sidedness in practice to the training in perception and language—shows the mother how to repress the child's eagerness to get hold of the outer world, by means of dry talks on the number and position of the bones of its own body.

How differently Froebel! who—improving on the suggestion of the mother of Appenzell—replaces her complicated, frail bird by pure types of unity, the soft colored balls of the first gift, which cannot be injured by the child's eager handling, nor repel its advances by the shocks of sharp points. These balls, hanging over the little couch before the child's eyes, call to the child awakening into consciousness:—Come out, we are here! Come out to us! See, we move, we live; come, play with us! Come, love us, and let us love you!—These constant calls of the balls are interpreted by the mother in pleasing, simple, endearing word and song, and thus invested with new and ever-growing charms; and, then, child and mother and ball roam about in the immediate neighborhood and explore the world within the child's reach, the child's world. All the child's growing ideas of outer individualities cluster about the balls, and, when resting from their explorings, child and ball and mother rehearse their experiences, the ball ever ready and competent to represent, at the bidding of the child, the images of the ideas gained, making the child's growth an all-sided, doing, living growth, instead of an all but passive "see and babble."

In due time, the child's powers have grown stronger, the scope of its perception has become more extended, its purposes are more complicated and remote, its skill in saying and doing is increased above the level of the first gift. Then, the hard ball, cylinder, and cube of the second gift, differing widely and decidedly from one another in external character, step in, saying to the child: We are different, compare us; we can each do many and different things, try us; we can go further on all sides than the soft balls, come roam with us!—and, later, the third and fourth gifts rush in, shouting: Look *into* us; measure, count, change us; do with us what you will: we shall always give you joy, show you new sights, help you in all your merry play, and give you a world of happiness. In all this, and in all else, the mother follows and takes part, cheering, interpreting, helping the child in its efforts to understand and control its expanding world;—not forcibly lifting it up into *her* world, where it feels so strange, and lost, and powerless.

It seems to me that in no direction does Pestalozzi deserve more the gratitude of mankind than in his spirited vindication of the mother's influence in the work of education, and of her natural fitness for the task. Yet, aside from his general fault of running in his practice directly against his theory, or falling far short of his aims, his views on this point seem to suffer unusually from that crudeness, vagueness, uncertainty, and lack of foundation, against which Froebel was secured by his strict adhesion to his view of life. Nay, it is doubtful that Pestalozzi respected women as a factor in humanity, equal in importance to man, since in his own teaching he never addressed the girls, but only the boys. In short, the contradictions in his nature appear here, perhaps, most glaringly. On the one hand, he extols "the parental heart" as "the only sure foundation on which to build institutions for popular education," and "the holiness of home" as "the only condition of equal development of all the human faculties;" on the other hand, he almost wholly ignores the father's existence as an important specific factor of home-life. On the one hand, he exalts the mother above the schoolmaster, and makes her the schoolmaster's teacher; on the other, he would degrade her into a petty school-pedant, and her hand into a little factory of schoolish automatons. On the one hand, there are prophetic glimpses of the widest truth in all her fulness and brilliancy; on the other, a blind surrender to expediency with the narrowest of aims.

None of these contradictions, none of these wanderings perplex us in Froebel. To him, the family in its completeness—father, mother and child—appear as "the holiest of holies of humanity," as the conscious triune molecule of human society; and in it, father and mother are equally supreme, each in the allotted way; both equally essential and responsible in the evolution of the child's life. If he speaks with greater warmth and concern of the mother, he does so, partly, because—as the representative of love—she stands, in the earliest years of the child, nearer to it, and appears, within the family, as a mediator between the father and the child, —and, partly, because he recognized that woman's culture had been neglected, and that it was necessary to insist strenuously upon the cultivation of her heart and mind, so that she might consciously and deliberately act her part in the life of the family, as the full equal of her male complement. Indeed, in his eyes the kindergarten derived much of its importance from its character as a school for mothers, and of conscious motherliness in women. And, how fully he has succeeded, in the organization and work of the kindergarten, in opening woman's mind and heart to the importance of her office as a mother of humanity, in supplying her with efficient means for filling this office consciously and successfully, and in full accordance with his view of life,—all can testify who have had a glimpse at the *inside* of kindergarten work.

In the light of the foregoing remarks, it is evident that, in his respect for the humanity in the children, Pestalozzi could not proceed much beyond the intense wish of protecting and nursing it, The attainment of this aim was so far beyond the circumstances under which he labored, his labors themselves were so fragmentary, his control of men and means so deficient,—that it must remain

for him a fond wish, an ultimate end. This, indeed, proves the intensity and purity of his own humanity, and—uttered in his own warm words—paved the way for success on the part of his pupils and followers. In the hands of the great path-finder Froebel, however, the humanity of the child is in truth the only and constant aim and outcome of the educational activity; in the least trifles, his view of life—which embodies the essence of highest humanity—is ever held in clear view; the child's progress in "unity with self, with others, with nature, and with God," is secured at every step. Thus Froebel proves that Pestalozzi's hope and faith were not a dream, but the prophetic conviction of a man whose every thought and deed were dictated by infinite love.

Pestalozzi's derivation of all training and instruction from sense-impressions, his so-called "laws of object-teaching," and his "alphabet of perfection," have been so frequently, so extensively and thoroughly criticized, that it would be loss of time and labor to undertake their criticism here. They are, indeed, well enough as far as they go; but this is their main fault, they do not go far enough in any direction. The truth that is in them is embodied in Froebel's simple law of the connection of contrasts, with which all are familiar, and which, as the law of intellectual life, supplies also the deficiencies of Pestalozzi's complicated code.

Thus we have seen that, in every point of Pestalozzi's great advance, Froebel has gone far beyond him, has—inasmuch as Pestalozzi's aim lay in the same direction—thereby proved the genius of Pestalozzi. It still remains for me to point out at least two features which, though hinted by Pestalozzi, are hinted so very vaguely and obscurely that they may be claimed as exclusive features of Froebel's work. I refer to his training of manual skill, and to the use of the kindergarten in training the social nature of children.

Manual skill, in Froebel's educational scheme, plays a part similar to language: it is trained and used as a medium for the expression of ideas. These expressions of ideas are fashioned by the hands from some more or less plastic material, and have the great advantage of resembling the things expressed more or less closely, more or less directly, more or less corporeally. The child, therefore, has an opportunity here to compare these more or less material representations of the ideas of things with the things themselves, to test their accuracy directly, to correct misapprehensions and supply deficiencies on the spot,—in short, to get new, clearer, fuller insight in applying its previous insight in self-active, joyful efforts to its purposes of pleasure.

These exercises, in giving outward form to the images and imaginings of its own mind, are carried on in such a way as to give the child almost reverence for the material with which it plays with the purposes indicated. The great pleasure it derives from the playthings render them naturally dear to the child, and this grateful love is kept fresh by handling the playthings in such a way that they will never cease to give fresh, higher pleasure. What the child saw yesterday in these playthings is there again to-day, with much new insight; and this fact, repeated daily, plants in the child's mind the faith that they are inexhaustible, leading it to an appreciation of the infinity of truth, of which they are utterances. Thus it happens that in later years, when the child has acquired much skill in the more complicated use of advanced gifts and occupations, it will return to the ball again and again with renewed zest, sure of seeing in it or with its help something new, or in a new, clearer light—of acquiring some new power or intensifying some old one. This secures it against surfeit and ennui, these greatest enemies of peace and purity: for it, the simplest surroundings—the plainest world, as it were,—teem with pleasures "ever fresh and ever new," with opportunities to see and do.

Even what, in less thoughtful play with the occupations, *e. g.* with cutting and folding papers, would be thrown aside as waste, Froebel utilizes in a variety of ways with the child, chiefly in training the æsthetic sense by arranging the waste clippings in numberless forms of symmetry, or otherwise applying them to purposes of ornament. Thus the child learns to love and respect what in superficial comparisons we are pleased to call the meanest things, as being connected in their essence and in their possibilities with the essence of all things.

If to this we add that Froebel's series of playthings, viewed as a whole, represent, on the one hand, a comprehensive and all-sided analysis of the material universe into abstract elements, and, on the other hand, a clear, distinct synthesis of these abstractions into a new ideal universe in the child's mine; and that the feature pervades the entire scheme at every stage and step, giving the child in and through its play, at all times, the full mastery of its expanding world, inwardly and outwardly:—we are forced to admit that Froebel has, indeed, found a way of leading, as he expresses it, "to widest and highest life, in and through life."

Right on the surface of this phase of Froebel's scheme, it will be seen that it leads to the industries and to art. This, surely, is one of its greatest merits, inasmuch as progress owes, perhaps, its greatest triumphs to the industries and to art; yet we should be in danger of injustice to Froebel, and of perverting his work or lessening its scope and influence, were we to overlook its broader and deeper tendencies in the development of child-nature, by laying too great or exclusive stress on its industrial and art bearings. Froebel leads to the love of work by training and enabling the child to find its greatest pleasure in creative doing; he leads it to skill in imitative and inventive labor by teaching it to utilize every new idea or insight at once and successfully in efforts to make life more enjoyable, rendering the surroundings clearer, and more beautiful, and more yielding with the help of the new light; he leads to art by enabling the child to enjoy, from its germs onward, the delight that attends the habit of giving outward plastic expression to the ideas and ideals which a rich life generates in a fertile mind.

One of the most prominent distinctive features of Froebel's educational scheme, and more especially of the kindergarten, is the attention it gives to the training of the social instincts. Indeed, this constitutes—as I have attempted to show in my address to your body at the Boston meeting—the specific use of the kindergarten. The training which the child receives in the kindergarten for *intercourse with equals* is something which the family cannot give and which the school has heretofore offered only incidentally, if at all. In this light, Froebel's kindergarten appears as a sort of ideal society in which a generous self-assertion goes hand in hand with a rational self-sacrifice, in order to secure the greatest possible individual and common happiness; a society which takes delight in aiding individual development, because it knows or feels that the most highly developed individuality confers the greatest benefit upon all concerned, is most useful in the common enterprises; a society in which each individual is ever ready to give itself wholly to these common enterprises, because it knows or feels that its self-sacrifice will be amply repaid by its share in the common success. The social games and the group-work are the chief means of this social training; yet, in addition, every exercise is greatly modified to adapt it to the requirements of social training.

A full sketch of Froebel's work would, indeed, require more attention to the details of features which here could only be hinted; but my aim was chiefly to show that Froebel went far beyond his great predecessor in all directions in which the latter himself labored. I hope that, in addition to this, my remarks may have proved to you that we have still much to do to attain his ideals, and to

apply to all educational phases the principles which he had time to apply fully only to early training; that the work, as far as he has applied it to practice in his directions to mothers and kindergarteners, cannot be measured by the standard of the school, which stands on a narrower foundation and has narrower aims, but only by the child's life, and the child's *whole* life; and that in due time, there must come a progress beyond him.

"TECHNICAL EDUCATION."

A PAPER READ BEFORE THE COLLEGE OF PRECEPTORS, LONDON, ENGLAND, JUNE 16TH, 1880.

BY R. WORMELL, D. SC., M.A.

Let us begin by asking a question, which has been asked a hundred times already, What is Technical Education? We must first settle the method in which the meaning is to be determined. Dr. Syntax would probably remind us of the origin of the word "technical," and conclude that it applies only to terms that belong exclusively to the arts and manufactures, and that if it means more it is a pity. But words in present use refuse to obey Dr. Syntax, and have but little respect for him; they are constantly altering the range of their application as new ideas and new things are found, and have to be provided for; and if we are to understand what is meant by this phrase, "Technical Education," which is used by different bodies of educated men, we must not be hampered by the remembrance of its origin, but must give it such an extended meaning as will make it include all that it is intended to mean by the different sections of men who use it. It will require a little attention to arrive at the meaning in this way.

In 1869 there was a meeting at the Mansion House on the subject. The Lord Mayor was in the chair. Many speeches were made, and at the end of each, the Lord Mayor asked,—"Is that Technical Education? Is that what you mean by Technical Education?" And at the conclusion the Worshipful contribution to the discussion of the day was a remark of a dozen words having quite as much vigour, and not more daintiness or accuracy of expression, than is often characteristic of the utterances of the Chief Magistrate of the city. As he rose to vacate the chair, he said,—"Gentlemen, Technical Education must be the devil's own word, for none of you know what it means."

If we examine, first, the arguments in favor of it which are adduced by its advocates; and secondly, what it is supposed to do, and what not to do; we shall find that there are many and various views that may be taken of it; but these, with all their variety, when closely examined, exhibit no inconsistency.

In the first place, I remark, if the word "technical" simply meant what it does in the phrases "technical terms," "technical objection," "technical language," etc., there could be *no* such thing as "Technical Education." "Technical Instruction" there might be, but no "Technical Education." Let us next examine a few phrases and maxims in which it has been used.

A critic, commenting on the work of the Science Classes connected with South Kensington, says:—"The teaching has been too technical, in the sense of addressing technical phraseology to unaccustomed ears, and not sufficiently technical in the sense of supplying the necessary link between theoretical knowledge and its practical application."

Mr. Scott Russell's definition is as follows:—"Technical Education is that special training which renders the talents of the educated man directly useful to that society in which he is destined to pass his life." And in the dedication of his work, he asks "that the dexterous, energetic, willing, working people of England may receive a practical education for useful life, as thorough and systematic as the best educated nation in Europe." He goes on to describe the agitation with regard to this subject as "a crusade against the ignorance, disorganisation and neglect, which distress our manufacturers and commerce, and hinder our progress and well-being."

Professor Huxley says:—"Technical Education means that sort of education which is specially adapted to the needs of a man whose business in life it is to pursue some kind of handicraft; it is, in fact, a fine Greco-Latin equivalent for what in good vernacular English would be called 'the teaching of handicrafts.'" At first sight this definition seems more cramped than the previous one, but Professor Huxley proceeds to illustrate his meaning more fully, and shows we are quite in accord, for he calls himself a handicraftsman and a teacher of a handicraft. "The fact is, I am, and have been any time these thirty years, a man who works with his hands—a handicraftsman. I do not say this in the broadly metaphorical sense in which fine gentlemen, with all the delicacy of Agag about them, trip to the hustings about election time, and protest that they too are working-men. I really mean my words to be taken in their direct, literal, and straightforward sense." And then, after sketching the course of exercise, both bodily and mental, which he would recommend as preparatory to the actual adoption of the manual employment, he says:—"Well, but you will say, this is 'Hamlet' with the Prince of Denmark left out; your 'Technical Education' is simply a good education, with more attention to physical science, to drawing, and to modern languages, than is common, and there is nothing specially *technical* about it." Exactly so; that remark takes us straight to the heart of what I have to say, which is that, in my judgment, the prepatory education of the handicraftsman ought to have nothing of what is ordinarily understood by technical about it.

I shall suggest to you, as a suitable definition for the present time, that *Technical Education is the development of the qualities of head and hand which are required for the successful pursuance of trade, and the progressive extension of our arts and manufactures.*

This definition recognizes the direct connection of Technical Education with trade, commerce, manufacture, public works, agriculture, navigation, architecture, etc., and is consistent with the view, that one of its principal aims is to lead each individual to know more thoroughly the fundamental principles of his own calling. It enables us at once to trace the connection between Technical Education and the teaching of Physical Science. We often find the statement of its need, coupled with the complaint that workmen, in all trades and all professions, are too much inclined to work by *rule of thumb*, and are not fully conscious that *Science* is now the sole foundation of skill. The knowledge required in our skilled trades and professions was formerly based on tradition. The three mysterious powers of heat, light, and electricity were regarded, until very recently, almost as supernatural agencies; and yet much of the work of the skilled men of our times consists in the liberating and controlling of heat, in the manipulation of the sun's rays, in the initiating and directing electrical currents. Traditional knowledge is now of little use; hence the need of Technical Education. But do we simply mean by it, the teaching of Science? We mean more. It involves the teaching of Science in a particular way. It is intended to promote the application of the discoveries of abstract science to the speediest, wisest, and most economical solutions of the practical problems of daily life and business.

There is a kind of science knowledge that is almost synonymous with practical wisdom; and there is a form of science which is fastidious and assumes airs, and despises practical usefulness, its proper offspring. Science knowledge, when judiciously selected and appropriately taught, adds very materially to the chances of industrial success, and Technical Education involves the teaching of science with this view. It is not a knowledge merely of natural laws that makes a people prosperous, it is the power of applying them to the every-day purposes of life. It is this *application* of science that is involved in Technical Education.

Scientific instruction becomes Technical Education, when, without ceasing to be thoroughly genuine and substantial, it adapts itself to the more or less divergent requirements of men of different trades and businesses.

Next let us ask to what sections of the community this education is to be given.?

Although probably it is more important to the sections who are nearest to and most nearly connected with trade than to others, yet it concerns the nation as a whole, and in some form or other connects itself with education in all grades and for all ages. Technical Education is everywhere something to be added to existing general education.

I was much interested in the reports of the festivities on the 4th of June, at Eton, which appeared in a daily paper of the 5th. "A special feature of this anniversary of Eton's gala day, was the visit to the Museum of Natural History and School of Practical Mechanics, which have both been opened since the last fourth of June. There is throughout the Museum a manifest intention to subordinate mere 'curiosities' to useful series of specimens. Mangy monkeys and Fiji war-clubs have no habitation on the neat, workmanlike Eton shelves, for everything there is for use and not for

show ; for its value in teaching the important lessons of physical science, and not as being merely ornamental or curious. From the Museum the visitors went to the School of Practical Mechanics, and the earnestness with which Young Eton has taken up this novel department, setting the example to our Public Schools of turning attention practically to the industries that have made England great, is beyond all praise. Immediately upon entering the iron lathe room, a steam-engine of probably five horse power, made from end to end by Etonians, is the first object that meets the eye ; and, in the other rooms, all the wooden fittings to lockers and other adjuncts of a workman's laboratory, are the manufacture of Young Eton ; admirable work it is too, conscientiously done, and excellent in its finish. The smithy, with its rows of bright fires, all waiting for the young blacksmiths, but waiting this fourth of June in vain, is a piece of delightful realism when met with in such surroundings."

This state of things at Eton leads one to call to mind some of Locke's thoughts on Education. Locke cared little for realism or the study of things, yet, in sketching the education of a country gentleman, he recommends his pupil to practise working in iron and metals, and remarks :

" He will be able to contrive and make a great many things both of delight and use; though these I propose not as the chief end of his labour, but as temptations to it.

" If this were of no other use but to drive out of fashion the common, vicious, useless pastimes, and to show there was no need for them, it would deserve to be encouraged. If men from their youth were weaned from that sauntering humour, wherein some out of custom let a good part of their lives run uselessly away, they would find time enough to acquire dexterity and skill in hundreds of things, which, though remote from their special callings, would not at all interfere with them. And, therefore, I think, a lazy, listless humour, that idly dreams away the day, is of all others the least to be indulged in young people. It is the proper state of one sick and out of order, and is tolerable in nobody else of what age or condition whatever."

He then refers to the mistaken parents, who, frightened with the disgraceful names of Mechanic and Trade, have an aversion to anything of the kind.

Not only in higher walks of life will it be found that the possession of the knowledge and skill which we are now considering will make life pleasanter and free from temptation. On a visit to a Midland town lately, I asked an old friend who had two sons about twenty years of age, " How are your boys ?" "Joe is *not* doing well. He settles to nothing, and he causes us much trouble; but Ben is a good lad He took to ' mackling' a few years ago, so you may depend on his being steady. When a lad takes to ' mackling,' he can't be drawn into wrong. He has made a bicycle, the best that was ever made, all with his own hands, and he is now making a new sort of railway break."

But we can see several other good results that may follow the course adopted at Eton. It must have the effect of opening up a new profession for many talented men, to whom the Church, the Bar, and Medicine, offer such slender chance of eminence, and, by infusing such talent into industry, it must increase the prosperity of the nation. Further, the diffusion of a knowledge of the principles of trade and of handicraft-skill, must lead to a truer appreciation of each man's worth, and deepen the interest of each man in his neighbour's well-doing. When Technical Education prevails, every man's merits will be better known, and the fool and the ignorant man will find it impossible to become masters, managers, foremen, or directors.

There are many good results to be derived from Technical Education in high places, but it must be remembered that its most vigorous life can be found only where it is stimulated by the actual presence of trade. In the busiest towns and cities, and in the busiest parts of every town and city, there will be a natural demand for it, and it will have a natural and active existence, that it can never gain at Eton or Harrow, at Oxford or Cambridge. But the qualities required of the young race of men, who are to do the nation's work in the next generation, that they may secure the nation's prosperity, must be widely diffused, and Technical Education should aim at developing them in the whole youth of the nation.

We have to secure that the ingenuity and skill which have been characteristic of our people in the past, and have given us prosperity, shall not die out, but shall rather be improved. But everywhere there are signs that men might exercise more forethought, practical wisdom, and make more provision for economy. Hence, everywhere there is need for Technical Education.

In endeavouring to find out " What Technical Education is," we have already gone into some of the arguments in support of it. There are a few yet which we must here consider. It is often stated that the skilled artisans of Great Britain are behind their confrères of Germany, France and Belgium, and that this arises from the Technical Institutions that flourish in the latter States. This form of the argument is usually accompanied by elaborate accounts and more elaborate statistics of these foreign institutions; but it too frequently happens that those who are warmest in their praise of the ways of doing things on the Continent, show themselves wonderfully ignorant of our own. Moreover, there are English ways of doing things which suit English minds and temperaments. If you could transplant the institutions which have flourished in France to English soil you could not guarantee their continued life. It might be found that they would languish and die.

A better argument is that furnished by considering simply the results of raising a generation of intelligent, educated, and trained people. The immediate consequences, of course, are found to be connected with trade, with art, and manufactures. A nation prospers in proportion to the work its people do. Intelligent men do better work than dullards. Trained and skilled men do better work than clumsy and awkward ones, and the more any man knows of the objects and methods of his work, and of the work of all those who co-operate with him, the more likely he is to do his own part well, and so as to make it exactly fit into and form one with the work done by his neighbours. An intelligent community of workmen will waste less in time and material, and give a higher value as well as quality and durability to all their work, than ignorant, unrefined, and ill-educated men.

The work of each citizen will have value in proportion as he can do it better than other citizens can, and the aggregate work of all the citizens will have greater value in proportion as each has been best trained in his own department. The highest value in the world's markets will be obtained by that nation which has been at most pains to cultivate the intelligence of its people generally, and afterwards to give each the highest education and training in his special calling. In other words, the value of a nation's work will be augmented in proportion to the excellence of its system of Technical Education.

There is a way of referring to the experience of foreign countries, which I think is perfectly legitimate. The following account is an example :—

" In every country," says the writer, an experienced engineer, " where Technical Education has taken root, and had time to bear fruit, I find unquestionable proofs of the rapidity with which increased intelligence and enlarged knowledge bring increase in employment and remuneration. From my personal experience, I may say that within the last twenty-five years I have seen large branches of commercial trade leave one country and plant themselves in another, because the workers of the one were educated and those of the other uneducated ; and I have watched nations rising into importance and power in Europe by education, and by the order, organization, and efficiency which education bestows, and other nations lagging behind and losing their places by reason of their unwillingness to educate the higher or the lower classes of their people."

But, even without travelling, we might conclude that, what is here described would take place. Industry must in future be supported, not by a competition of local advantages, but by competition of intellect. A people not possessed of raw material, mechanical power, or brute labour, can set against the non-possession of these advantages, greater skill in using what they have, and can employ higher science in their treatment and application. They may buy the raw material and the skill of their highly educated and trained workmen, and may give it a value it could never have acquired at the hands of the uneducated and untrained men who at first possessed it.

The influence of capital may, for a time, purchase foreign talent. To some extent this is the case in England, and justifies the remark that the apathy of the nation in the education of her sons has sent her capital abroad, as a premium to the intellectual superiority of other nations.

I think we are now so far advanced with our subject as to be able to frame a scheme of Technical Education.

1st Grade.—Where is it to commence ? and where to end ? We may answer the first question by another, When do we begin to

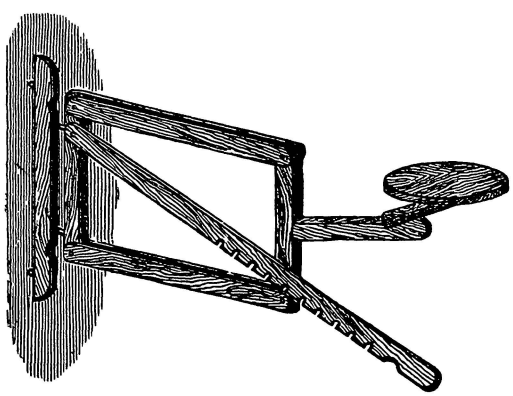
form the intellectual habits that are required for the conduct of industrial operations? Almost with the beginning of education. The Kindergarten teaching is an admirable beginning.

Again,—Technical Education will have a bearing on many things that are taught in the ordinary school course, giving the pupils the ability to use their knowledge for the purpose of bringing about special results, and giving them skill in applying that knowledge in special circumstances.

For instance, it is possible for an apt teacher to gather round his lessons in geography, much that is attractive in the study of nature, and much that is useful in trade and politics.

To show how the Technical Teacher, in the sense in which we are now using the term, would treat a matter of general teaching, and that his method would consist in adding something to what the general teacher would impart without weakening its effect, we may refer to his mode of treating a proposition of Geometry, the Science of Form. There is no science less practical, or more practical, according to the way in which it is taught. It may be little more than an antiquated puzzle in logic, or it may be a mine yielding rich treasures of useful application to the purposes of life.

Suppose the subject to be the parallelogram. The pupils prove that the opposite sides are equal. They discuss the use of this fact in measuring and transferring distances. Then follows the proof that, if the opposite sides are equal, the figure is a parallelogram. The practical consequences are immediately sought for. If the finure keeps the same sides, it remains a parallelogram. Hence, a jointed parallelogram easily changes its form, but once a parallelogram it is always a parallelogram. Here the practical manipulation comes in. A jointed parallelogram is made. It is not a strong structure. We give it strength, however, by the introduction of a diagonal. This leads us at once to the reason for a cross-bar in a gate. The diagonal has a fixed length for each inclination of its sides; we therefore fix the inclination when we fix the length of the diagonal. If one side of a jointed parallelogram be fixed in a horizontal position, the opposite side is horizontal. If a horizontal arm is attached to this, it may move up and down and be always horizontal. The pupils then go to their workshops with some such exercise as the following :—*Devise a jointed parallelogram which shall serve as a universal joint, supporting a horizontal table, that may be placed at any altitude within certain limits, and may occupy any distance from a fixed support within certain limits.* Each would work out the design in his own way. No two designs would be exactly alike, but all would be something like that represented in the figure. Ever afterwards, the parallelogram would be a very different instrument in the hands of these pupils from the vague and shadowy *ABCD* of the pupil who had simply learnt with infinite labour to repeat the text of a Simpsonised Euclid. I expect this little illustration to do much in showing what is the kind of addition to general instruction which Technical Education calls for.



2nd Grade.—The Technical Education which can be carried on in existing ordinary schools may be said to be of the 1st Grade. The 2nd Grade requires special Technical Schools. They should be at first affiliated, and connected with the schools for general education. I often reflect that one of the most important functions of the schoolmaster and schoolmistress is to direct the pupils to congenial and suitable employment on leaving school, and one of the most mportant of the functions of the Technical Educator is to select from amongt the members of the rising generation those who have most natural aptitude for industrial occupations, to develop their powers and consecrate them to the most suitable trades and businesses. This can only be done when there is a most intimate alliance between the general and technical schools. Indeed, if it were not for questions of economy, it would be best that these should be combined in one and the same school; but Technical Education is so costly, and good teachers are so rare, that we must be content to secure one good technical school in common with several elementary and higher schools for general education.

Let me here refer again to the necessity for the Technical School receiving its life and spirit from the principal trade or business of the neighbourhood. In a mining district, the applications sought for will have as much reference as possible to mining; in a watchmaking district, to horology; and so on. In London, they must necessarily be of a more general character, with here and there a special charge, as of carving and design, some branch of engineering, brewing, some department of chemistry, dyeing, navigation. These same Technical Schools should take charge of what we may call the 3rd Stage, that is, they should take charge of the selected pupils who possess in a high degree intelligence combined with inventive ingenuity and practical cleverness, and interpose a special training during the few years which intervene between school-life and business. This is the place for me to notice one important object which Technical Education is asked to serve, viz.—to remedy the effects of the decay of the old apprenticeship system. All that was best and most valuable in the old system has vanished, and the little that remains belongs to its worst and least advantageous features. What is to replace this decayed and obsolete system? The answer is, a complete system of Technical Education.

It was formerly reckoned wise that the knowledge of a professional man should be kept secret as capital in trade, and no effort was neglected which would tend to throw a mystery about it. Its maxims and rules were concealed lest others should become as wise as the master, who had paid a heavy price for his initiation. Technical education aims at unveiling this mystery, and making occult knowledge public property; hence it will remove the need for heavy fees to the mystery men.

At the same time, as has been pointed out in an able report by Professor Ayrton, it is not the business of a Technical School to teach the manipulation or routine of a trade, or to become a rival to other manufactories. It is a school where are given *general* instruction in science, and *special* instruction in the application of these principles to the particular trade he is following or is able to follow. As our definition shows, it is not the teaching of trades we are considering, but the development of the qualities that are needed in trade.

3rd Grade.—Again, chiefly by means of evening work, education may be continued in these schools after business has been entered into. Here we are naturally led to ask at what age this process of training is to come to an end? It is not necessary to name the higher limit, for it should lose itself in reach. The Technical schools and colleges should be placed where the manufacturer and skilled artisan may carry out experiments under the eyes of scientific men, which he cannot carry out in the factory and workshop. Every industrial art is steadily undergoing change and development. It does not do for the manufacturer to stand still. A Technical School should assist those who are actually in business to penetrate beyond the knowledge of the processes of a manufacture which was at first given to them, and to make new observations and experiments relating to it.

But here a caution is necessary. In building up a system of Technical Education, it is necessary to guard against spending time in patching up defects arising from the want of system in the past. It is too late to mend the matured—we must aim at improving the rising generation.

4th Grade.—The form that Technical Education will assume towards the pupils of the 4th and final Grade, will be that of an University for the training of the more highly educated youth to the practical business of life. As a type of such an institution, we may select the Technical University of Zurich. Zurich is a commercial and manufacturing State—it is the Lancashire of Switzerland. It is also the scene of the labours of that indefatigable apostle of practical education, Pestalozzi. His spirit seems to haunt the land of his former toil, and to inspire his countrymen with the determination to perfect the work he so happily commenced.

In the Technical University of Zurich, everything that is most valuable in the sciences, arts, and manufactures of all other coun-

tries, is taught by the most distinguished men in their special departments, in the best manner which their wisdom can organise, and with all the practical means of learning which can be purchased or invented.

The University constructs a programme of methodical study, divided into eight groups, as follows :—

1. A course of architecture and building.
2. A course of civil engineering.
3. A course of mechanical engineering.
4. A course of mechanical chemistry.
5. A course of agriculture and forestry.
6. A course for men of science, professors, and teachers.
7. A general course of philosophy, statesmanship, literature, art, and political economy.
8. A preparatory course for bringing up pupils who are behind their contemporaries, especially in geometry, algebra, elementary, physical and chemical science, drawing and languages.

We meet with abundant testimony to the excellence of this foundation. One of its students, a young Englishman, who desired an education in a branch of civil engineering, and found it impossible to obtain that education in England, having passed through its course, returned to England and entered himself in the usual manner as a learner in the works of an eminent engineer :—"Here the advantages of Zurich soon showed themselves unmistakably ; his superiority was so evident, that he soon rose over the heads of much older men, and long before his apprenticeship expired he had already been entrusted with heavy responsibilities and important duties, which could not be entrusted to men much older and more experienced, but less skilfully trained and less highly educated."

Here we will pause a minute to survey the field we have traversed. We have shown that the purpose of Technical Education is to increase the quantity and the quality of the handicraft-skill in the nation, and to connect it with the highest attainable intelligence. It is the business of the Technical Educator to teach whatever there is in the science, philosophy, learning, or art of modern times that has any bearing on the practical business of life, to show how the knowledge is to be used, and to discipline the possessor in its application.

We have pointed out that it naturally has four stages or grades. It is at first co-ordinate with general education. It is then auxiliary to, or a continuation of, general education. The principal maxim it puts before its disciples is, work and think, and work again, think and work, and think again. It selects the shrewdest and most handy amongst the young, and devotes them to industry. It assists them, guides them, and watches over them as they embark in their trades and professions, and finally it strives to pick out the exceptional powers to account for the good of industry.

You may probably think I have wasted time in proving what all must acknowledge. Nearly all do acknowledge the importance of a practical education, but I have frequently referred here, with some impatience, to the fact that there are still to be found in our high places of learning scholars and college dons who scoff at the practical applications of knowledge ; and I have pointed out that society could not exist if all men acted on what these men profess. There is a method, in mathematics, of finding the value of a form by tracing the result *to infinity*, and we may estimate the worth of the opinions of some of our university teachers by a similar method. If their theories could prevail and be acted on to a large extent, the land would become a prey to poverty and distress, and finally to desolation and death. A friend of mine, more patient than myself, often says, in response to my complaints :—"They mean well, but they do not know. They do not know the meaning of what they say." To my mind no ignorance is so gross as that of the uneducated scholar who despises all that has direct reference to the practical business of life, to the well-being of society, to the commercial prosperity of the people.

JOHN I., 1.

To the Editor of the Canada School Journal.

SIR,—I was a little surprised, on reading your last issue, to find the thesis of my article and the fundamental principles underlying elocutionary analysis so perverted by J. H. Knight, P. S. I.

I trust you will allow me space in your next issue to correct a few errors the gentleman has, perhaps unwittingly, fallen into. In my last article I ventured the opinion that "with God" is only a secondary idea to the capital thought, "The *Word* was *God* ;" and also that "if the word was God it must have been *with* God." Mr. Knight dissents from these opinions, and gives as his reason that, according to the Gentile ideas, the word might have been with God, but not God—in other words, might have been *a* god, but not the Supreme God, that is, he might have been a rival God." I submit that the phrase "with God" ought not to be interpreted according to Gentile ideas, which admitted a plurality of Gods, especially as it was one of the aims of the sacred writer to combat *polytheism* and establish the proper divini y of Christ, and the unity, not of location, but of nature, and authority of the Word with God. He says :—In the beginning, that is, of the creation (for the writer evidently refers to the first word of the book of Genesis, *bereshith*, the expression here used), was the *Word*, that is, the word existed at the beginning of the creation, and consequently from eternity. He was when all things began to be ; whatsoever had a beginning. And the *Word* was *God*, and *God* was the *Word*,—namely, before any created being had existed. Therefore, the Word must have been with God, and God with the Word.

The writer tells us, first, that the Word, in the beginning of the world, existed ; next, that he existed with God, and, last of all, that he was *God*, and made all things. Now, taking up the point again, referred to by Mr. Knight, the Word might have been *a* god, that is, a kind of inferior deity, as governors are called gods. Dr. Doddridge says,—"This construction cannot be put upon it with impunity, that it is impossible he should here be so called, merely as a *governor*, because he is spoken of as existing before the production of any creatures whom he could govern ;" and it is to me most incredible, that when the Jews were so exceedingly averse to idolatry, and the Gentiles so unhappily prone to it, such a plain writer as John should lay so dangerous a stumbling-block on the very threshold of his work, and represent it as the Christian doctrine, that, in the beginning of all things, there were *two Gods*, one supreme, and the other subordinate, a difficulty which, if possible, would be yet further increased by recollecting what so many ancient writers assert, that this gospel was written with a particular view of opposing the Corinthians and Ebionites ; on which account greater accuracy of expression must have been necessary. On the other hand, to conceive of Christ as a *distinct* and *co-ordinate* God, would be equally inconsistent with the most express declarations of Scripture, and far more irreconcilable with reason. The words, as they appear in the original, Θεος ην ο λογος, have induced some to translate the clause, God was the Word. So it was read in the old English translations, authorized by Henry VIII., and thus Luther rendered it in his German translation, "*Gott war das wort.*" Now, according to the rules governing emphasis, we must transfer the emphatic stroke to those words in the verse that assert the meaning, viz. :—In *the beginning* the *Word* was *God*. If Mr. Knight's reasoning is satisfactory to him, I think I am safe in surmising it will be very unsatisfactory to almost any one else. Mr. Knight considers my quotation (The British Empire was a strong nation) unfortunate, and says it (his objection) could not have that effect with "was God," for "once admit the divinity of the word from eternity, and you must admit His divinity to eternity." So we say "God cannot be less than God," cannot "cease to be God," to use Mr. Knight's words, and by parity of reasoning could not begin to be God, hence it is not necessary to put primary emphasis on "with God," for that is all conceded in the fact that he was "*God*," the main object of the Apostle's teaching. With regard to commentators, and their explanations of difficult passages, I do not doubt but that they are often valuable auxiliaries to the elocutionist in reading a passage, but they are far from being infallible guides when we come to the question of correct emphasis. The commentator may understand the meaning of a passage and not be able to read it, and place the emphasis properly. Take for example the 25th verse of the 24th chapter of Luke, "Then he said unto them, O fools, and slow of heart to believe all that the prophets have spoken.', Now it is not to be questioned for a moment but that every commentator understands fully the meaning of the verse, and will Mr. Knight have the kindness to refer me to *one* Biblical scholar who has written on the above passage, and placed the emphasis upon the right words, so as not to pervert the true meaning of the Master. I merely refer to this to show that it is not always safe to follow, or be guided by commentators in reading a passage, especially with regard to emphasis. Their understanding it does not follow that they can always dictate just where the primary emphasis should

rest, or read it so that others can understand the meaning. As to Mr. Knight's quotations, "Cain was with Adam and Cain was Adam, Jacob was with Israel and Jacob was Israel," I can only say that if my quotation was unfortunate, his are extremely *absurd*, for there is no similarity between them and the "word was with God, and the word was God," for Cain and Adam were two distinct and separate beings, having separate natures, and not *two in one* as God and Son had. Jacob (for the same reason) could not possess two natures in one; therefore, these comparisons to God and the Word, Christ, are simply ludicrous, and need no further refutation. Mr. Knight must be groping in darkness.

In reference to Mr. Knight's "*lastly*," I have only to say that it is not necessary for us to discuss "whether many of the best orators have known nothing of rules" but whether, according to rules well understood, John i. 1 should be read in *this* way or in *that* way.

Respectfully yours,

Woodstock, June, 1880. J. M. H. HARRISON.

Examination Questions.

EDUCATION DEPARTMENT, ONTARIO.

JULY EXAMINATIONS, 1880.

SECOND CLASS TEACHERS AND INTERMEDIATE.

ARITHMETIC.

TIME—THREE HOURS:

Examiner—J. A. McLELLAN, LL.D.

Values—Each 10 marks.

1. The G. C. M. of two numbers is 9187, and their L. C. M. is 634938944494: one of the numbers is 68590142, find the other.

2. (1) Divide 159.982 by .0009840018 to 7 places of decimals.

(2) Reduce $\frac{61}{4649}$ to a periodic decimal.

(3) Reduce .$\dot{7}002457\dot{}$ to a vulgar fraction.

3. There is a rectangular garden whose length is to its breadth as 6 to 5; running round its outside is a gravelled path 3 yards wide; this path cost, at $18\frac{3}{4}$ cents per square yard, $127.25. Find the dimensions of the garden.

4. Simplify $\frac{2\sqrt{90}}{3\sqrt{108}} \times \frac{7\sqrt{192}}{5\sqrt{126}} \div \frac{4\sqrt{15}}{15\sqrt{21}}$. Find the mean proportional between 3402 and 15172; and extract the square root of .000097199881.

5. The oxygen of the air is 3 parts (by volume) in 14 of the whole; 100 cubic inches of air weigh 31 grains, and the weight of oxygen is to that of air as 53:48. Find the number of grains of oxygen in a cubic foot of air.

6. A, B, and C do a piece of work; it would have taken A $2\frac{1}{2}$ times as long as B and C together, and B $3\frac{1}{2}$ times as long as A and C together. If they receive $240.40 for the work, how much should each man receive?

7. Assuming that 90 cubic inches of lead, together with 81 cubic inches of cork, are equal in weight to 2308 cubic inches of pine, and that the weights of equal bulks of lead and pine are represented by the numbers 226.48, and 9, respectively; determine the proportionate weight of an equal bulk of cork.

8. A merchant in Toronto owes £560 stg. in London, and remits as follows: first to Paris at 5 francs 60 centimes per $1; thence to Hamburg at 2 francs per marc; thence to Amsterdam at $17\frac{1}{2}$ stivers per marc; thence to London at 224 stivers per £1. If the expense of this circuitous exchange be 2 per cent. (*i.e.*, of $102 paid by the merchant, $2 is lost in commission), find what it costs to discharge the London debt.

9. I had two notes whose aggregate face value was $761.70, and each of which had 15 months to run; one of the notes was discounted at 10 per cent. bank discount, and the other at 10 per cent. *true* discount, and the total amount realized was $671.50. Find the face of the note on which *true* discount was allowed.

10. A cylindrical silver wire, .0015 millimetre in diameter, weighs 3.2875 grammes; it is to be covered with a layer of gold .0002 millimetre in thickness. Required the weight of the gold, the specific gravity of silver being 10.47, and that of gold 19.26.

SOLUTIONS.

1. No. required $= \frac{634938944494 \times 9187}{68590142} = 85044059.$

2. (1) 162583·0359253. (2) ·0131211̇.

(3) $\frac{700245}{999999} = \frac{285}{407}$.

3. $\frac{127 \cdot 25}{\cdot 18\frac{3}{4}} = 678\frac{2}{3}$ no. sq. yds. in path.

$\frac{678\frac{2}{3} - 36}{3 \times 2} = 107\frac{1}{9}$ no. yds. in two adjacent sides of path.

$\therefore$ sides $= \frac{6}{11}$ of $107\frac{1}{9}$ yds., and $\frac{5}{11}$ of $107\frac{1}{9}$ yds., or $58\frac{1}{3}\frac{4}{3}$ yds., and $48\frac{6}{9}\frac{6}{9}$ yds.

4. (1) $4\frac{2}{3}$. (2) 7184·3. (3) ·009859.

5. No. grains $= \frac{3}{14} \times 1728 \times \frac{5}{4}\frac{3}{8} \times \frac{3}{1}\frac{1}{0}\frac{}{0} = 126\frac{2}{3}\frac{6}{5}\frac{1}{0}$.

A does work while *A*, *B* and *C* do $3\frac{1}{2}$ times work, $\therefore$ *A* does $\frac{2}{7}$ of whole work, and $\therefore$ gets $\frac{2}{7}$ of money $= \$68.68\frac{4}{7}$. *B* does work while *A*, *B* and *C* do $4\frac{1}{2}$ times work, $\therefore$ *B* does $\frac{2}{9}$ of whole work, and $\therefore$ gets $\frac{2}{9}$ of money $= \$53.42\frac{2}{3}$. $\therefore$ *C* gets $\$118.29\frac{1}{6}\frac{3}{3}$.

7. Wt. $= \frac{2308 \times 9 - 226.48 \times 90}{81} = 4 \cdot 8.$

8. Cost $= \$560 \times 224 \times \frac{2}{35} \times 2 \times \frac{5}{28} \times \frac{102}{100} = \$2611.20.$

9. 761.70 − 671.50 = $90.20 total discount.

Bank discount on $761.70 = $95.2125.

$\therefore$ Dif. = $5.0125 = int. on true discount.

$\therefore$ True disc. $= \$\frac{100}{112\frac{1}{2}} \times 5 \cdot 0125 = \$40.10$

And note $= \$\frac{112\frac{1}{2}}{12\frac{1}{2}} \times 40.10 = \$360.90.$

10. Wt. of gold

$= \frac{(.00095)^2 - (.00075)^2}{(.00075)^2} \times \frac{19.26}{10 \cdot 47} \times 3.2875$ grammes.

$= 3.655+$ grammes.

ALGEBRA.

TIME—TWO HOURS AND A HALF.

Examiner—J. C. GLASHAN.

Values.

4 1. Find the value of $x^5 + x^4 - 166x^3 - 166x^2 + 81x + 81$

5 when $x = -7$; and the value of $x^3 - 3px^2 + (3p^2 + q)x - pq$ when $x = a + p$. (Arrange the latter result according to powers of a.)

4 2. What is the condition that $x + b$ shall be a factor of $ax^2 + bx + c$?

Find the factors of

5 (*a*). $(a^2 - ab) + 2(b^2 - ab) + 3(a^2 - b^2) + 4(a - b)^2$; and

8 (*b*). $(ax + b)(bx + c)(cx + a) - (ax + c)(bx + a)(cx + b)$.

4 3. What must be the relation among a, b, c that $ax^2 + bx + c$ may be a perfect square?

5 (*a*). Extract the square root of

$(a - b^4 - 4(a^2 + b^2)(a - b)^2 + 4(a^4 + b^4) + 8a^2b^2$.

8 (*b*). If 5 be subtracted from the sum of the squares of any four consecutive numbers, the remainder will be a perfect square. (Prove this.)

5 4. If $\frac{a}{b}=\frac{c}{d}=\frac{e}{f}$ and $\frac{h}{k}=\frac{l}{m}=\frac{n}{p}$

prove that $\frac{(a+c+e)(h+l+n)}{(b+d+f)(k+m+p)}=\frac{ah+cl+en}{bk+dm+fp}$.

5 (a). Reduce $\frac{ab(x^2-y^2)+xy(a^2-b^2)}{ab(x^2+y^2)+xy(a^2+b^2)}$ to its lowest terms.

8 (b). If $xy+yz+zx=1$ prove that

$$\frac{x}{1-x^2}+\frac{y}{1-y^2}+\frac{z}{1-z^2}=\frac{4xyz}{(1-x^2)(1-y^2)(1-z^2)}.$$

4. Prove that

5 (a). $\frac{2\{x+2+\sqrt{(x^2-4)}\}}{x+2-\sqrt{(x^2-4)}}=x+\sqrt{(x^2-4)}$.

5 (b.) $(b+c-a)a^{\frac{1}{2}}+c+a-b)b^{\frac{1}{2}}+(a+b-c)c^{\frac{1}{2}}=(a+b+c)(a^{\frac{1}{2}}+b^{\frac{1}{2}}+c^{\frac{1}{2}})-2(a^{\frac{3}{2}}+b^{\frac{3}{2}}+c^{\frac{3}{2}})$.

6. Solve the equations—

5 (a). $(b-c)(x-a)^3+(c-a)(x-b)^3+(a-b)(x-c)^3=0$.

8 (b). $x+y=4xy$; $y+z=2yz$; $z+x=3zx$.

8 (c). $x+y+z=0$.

$ax+by+cz=0$.

$bcx+cay+abz+(a-b)(b-c)(c-a)=0$.

8 (d). $\frac{x-1}{x+3}+\frac{x-3}{x+1}+2=0$.

SOLUTIONS.

1. (1.) On dividing by $x+\cdot7$ (use Horner's method) we find that expression equals $(x^4+\cdot3x^3-166\cdot21x^2-49\cdot653x+115\cdot7571)(x+.7)-\cdot02997$, which, when $x=-\cdot7$, becomes $-\cdot02997$, the factor $x+\cdot7$ vanishing.

(2.) Similarly this expression becomes a^2+ag+p^2.

2. The remainder on dividing by $x+b$ is $a(-b)^2+b(-b)+c=ab^2-b^2+c$, and required condition is hence evidently $ab^2-b^2+c=o$.

(a). $=(a-b)\{a-2b+3(a+b)+4(a-b)\}=(a-b)(8a-3b)$.

(b). Putting $a=b$, we see that $a-b$ is a factor, and thence by symmetry $b-c$ and $c-a$; also x and $x-1$ are evidently factors, the expression vanishing when $x=o$ and $x=1$.

Also the terms of six dimensions ($abcx^3$) evidently destroy each other. Hence the only literal factors are the above, and we may assume expression

$$=A(a-b)(b-c)(c-a)(x-1)x.$$

And assigning numerical values to a, b, c, x (say $a=1, b=2, c=3, x=2$) we see that $A=-1$. Whence expression equals $-(a-b)(b-c)(c-a)(x-1)x$.

3. $b^2=4ac$.

(a). Expression $=(a-b)^4-4(a-b)^2(a^2+b^2)+4(a^2+b^2)^2$.

$$=\{a-b)^2-2(a^2+b^2\}^2.$$

The square root of which is $\pm\{(a-b)^2-2(a^2+b^2)\}=\mp(a+b)^2$.

(b). $x-2$, $x-1$, x, $x+1$, will represent any four consecutive numbers. The sum of their squares is $4x^2-4x+6=(2x-1)^2+5$, and whatever be the value of x, $(2x-1)^2$ is a perfect square.

4. Let $\frac{a}{b}=\frac{c}{d}=\frac{e}{f}=x$; $\therefore a=bx$, etc., and $a+c+e=(b+d+f)x$

$\frac{h}{k}=$ etc., $=y$; $\therefore h=ky$, etc; and $h+l+n=(k+m+p)y$.

Hence $\frac{(a+c+e)(h+l+n)}{(b+d+f)(k+m+p)}=xy$.

Also $\frac{ah+cl+en}{bk+dm+fp}=\frac{bkxy+dmxy+fpxy}{bk+dm+fp}=xy$.

(a) $\frac{abx^2-aby^2+a^2xy-b^2xy}{abx^2+aby^2+a^2xy+b^2xy}=\frac{ax(bx+ay)-by(ay+bx)}{ax(bx+ay)+by(ay+bx)}$

$$=\frac{ax-by}{ax+by}.$$

(b) $\frac{x}{1-x^2}+\ldots\ldots=\frac{x(1-y^2)(1-z^2)+\ldots\ldots}{(1-x^2)(1-y^2)(1-z^2)}$

$=\frac{x+y+z-x(xy+xz)-y(yz+yx)-z(zx+zy)+xyz(xy+yz+zx}{(\quad)\quad(\quad)\quad(\quad)\quad(\quad)}$

$=\frac{x+y+z-x(1-yz))-y(1-zx)-z(1-xy)+xyz}{(\quad)\quad(\quad)\quad(\quad)}$, $\because xy+yz+zx=1$

$=\frac{4xyz}{(1-x^2)(1-y^2)(1-z^2)}$.

5. (a) $=\frac{2(x+2+\sqrt{x^2-4})^2}{(x+2)^2-(\sqrt{x^2-4})^2}$, rationalizing the denominator.

$=\frac{2\{x^2+4x+4+2(x+2)\sqrt{x^2-4}+x^2-4\}}{x^2+4x+4-x^2+4}$

$=\frac{2\{2x(x+2)+2(x+2)\sqrt{x^2+4}\}}{4(x+2)}=x+\sqrt{x^2-4}$.

(b) Transfer $2(a^{\frac{3}{2}}+\ldots)$ to the left side, which then becomes $(b+c+a)a^{\frac{1}{2}}+\ldots.+\ldots=(a+b+c)(a^{\frac{1}{2}}+b^{\frac{1}{2}}+x^{\frac{1}{2}})$.

6. (a) $(b-c\{x^3-3ax^2+3a^2x-a^3\}+\ldots+\ldots=o$.

And without multiplying out it may be seen that coeffs. of x^2 and x^3 disappear, and

$$x=\frac{a^3(b-c)+\ldots+\ldots}{3\{a^2(b-c)+..+\ldots\}}=\frac{(a-b)(b-c)(a-c)(a+b+c)}{3(a-b)(b-c)(a-c)}$$

$=\frac{1}{3}(a+b+c)$.

(b). Transform to $\frac{1}{y}+\frac{1}{x}=4$., &c.. finding $\frac{1}{x}$, $\frac{1}{y}$, $\frac{1}{z}$.

$$x=\frac{2}{5},\ y=\frac{2}{3},\ z=2.$$

(c). $x=b-c$, $y=c-a$, $z=a-b$.

(d). $x=-1\pm\sqrt{2}$.

EUCLID.

TIME—TWO HOURS AND A HALF.

Examiner—J. J. TILLEY.

Values.

6 1. Define Right Angle, Rectilineal Figure, Scalene Triangle, Postulate, Parallel Straight Lines, Gnomon.

10 2. (*a*) If two triangles have two sides of the one equal to two sides of the other, each to each, but the angle contained by the two sides of the one greater than the angle contained by the two sides of the other, the base of that which has the greater angle shall be greater than the base of the other.

4 (*b*) What restriction does Euclid make in his construction, and why?

10 3. The opposite sides and angles of a parallelogram are equal to one another, and the diameter bisects it, that is, divides it into two equal parts.

10 4. To describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

10 5. If a straight line be divided into any two parts, the rectangle contained by the whole and one of the parts is equal to the rectangle contained by the two parts together, with the square on the aforesaid part.

10 6. If a straight line be divided into two equal, and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line, and of the square on the line between the points of section.

10 7. Through a given point draw a line, so that the parts of it, intercepted between that point and perpendiculars upon it from two other given points, may be equal to each other.

10 8. BCDF is a four-sided figure, having the side BC parallel to the side FD. If BD and FC be joined by straight lines intersecting in K, show that the lines BD and CF are together greater than the two lines BF and CD, also that the triangle CKD is equal to the triangle BKF.

10 9. ABCD is a rectangle, E any point in BC, and F any point in CD. If AF, AE and EF be joined, show that the rectangle ABCD is equal to twice the triangle AEF, together with the rectangle EB DF.

10 Produce one side of a scalene triangle so that the rectangle under it and the produced part may be equal to the difference of the squares on the other two sides.

SOLUTIONS.

2. (*b*) The angle EDG is made at D in ED, the side which is not the greater of the two DE, DF. If this were not done, three different cases would arise,—the point G might fall above, on or below EF.

7. Let A be the point through which the line is to be drawn and B, C the other two points. Bisect BC in D; join DA, and through A draw bAc perpendicular to AD. Then if Bb, Cc be perpendicular to bAc, we may readily prove bA, cA equal.

8. (*1*) $BK+KF>BF$, and $CK+KD>CD$; $\therefore BD+CF>BF+CD$.

(*2*) Because BC is parralel to FD, the triangles FBC, DBC are equal. Take away the common triangle KBC, and the remainders of the triangles KBF, KCD are equal.

9. Through E, F draw EG, FG parallel to the sides, and meeting in G within the triangle. The rectangle AC is equal to the rectangles $BE.DF+BE.CF+EC.DF+EC.CF$, of which the latter three are respectively double the triangles AEG, AFG, EFG, which make up the triangle AEF.

10. Let ABC be the triangle. To BC apply a rectangle BCDE equal to the difference between the squares on AB, AC; and in BC produced take CF equal to CD.

NATURAL PHILOSOPHY.

TIME—TWO HOURS AND A HALF.

Examiner—J. J. TILLEY.

Value of each of the first six questions 13, *and of each of the last three* 14.

1. What conditions are necessary so that three forces acting on a body may maintain equilibrium?

Show how the following forces may be arranged so as to produce equilibrium:—(i.) 4 lbs., 5 lbs. and 7 lbs. (ii.) $(\sqrt{7}+\sqrt{5})$lbs. $(\sqrt{7}-\sqrt{5})$ and $2\sqrt{7}$ lbs. (iii.) 1 lb., 4 lbs. and $\sqrt{17}$ lbs.

2. Examine the truth of the following statement:—"If three forces acting on a body are parallel to the sides of a triangle they will keep it at rest."

A rod AC (supposed without weight) hinged at C, has a weight of 200 lbs. hung at A, and is kept in position by a horizontal tie-rod AB. The angle BAB is 30°; find the tension of the tie-rod and the thrust along AC.

3. If two sides of an equilateral triangle, take in order 8 ft. long represent in direction and magnitude two forces acting at a point, find two equal forces, acting at an angle of 120° to each other, which will, with these forces, produce equilidrium.

4. In a system of four pulleys, each hanging by a separate string, the weight of each pulley being 1 lb. find the relation between the power and the weight.

If a force of $2\frac{1}{2}$ lbs. just supports a weight of 45 lbs. in such a system, and the weight of the pulleys be equal, find the weight of each pulley.

5. If a substance be weighed in a balance having unequal arms, and in one scale appear to weigh m lbs. and in the other 4 n lbs. what is the true weight of the substance, and what is the ratio between the lengths of the arms of the balance. ?

6. Find the ratio of the power to the weight in the case of the inclined plane when the power acts [i.] parallel to the plane, [ii.] parallel to the base.

Show that the power is most effective when acting parallel to the plane.

7. Define Specific gravity, and show how to find the specific gravity of a body lighter than water.

A piece of wood weighs 4 lbs. in air and a piece of lead weighs 5 lbs. in water. The lead and the wood together weigh 4 lbs. in water; determine the specific gravity of the wood.

8. Describe, using diagram, the structure of the lifting pump. What determines the height to which water may be raised by means of it?

Describe the thermometer. At what temperature will the reading of the Fahrenheit thermometer be three times as great as that of the Centigrade? Give your answer in degrees Fahrenheit.

9. A cubical block of wood whose edge is 18 inches and whose sp. gr. is .75 is placed in water and pressed by a force into such a position that its upper surface, which is horizontal, is just one foot below the surface of the water; find the pressure on the whole outsids of the cube, and the downward force acting upon it.

SOLUTIONS.

1. (i) Take AB a line $=4$; from it cut off $AC=1$; draw CD perpendicular to AB, and from centre A with radius 5 describe a circle, cutting CD in D. Then the forces 4, 5 act along AB, AD, the force 7 will act opposite to the diagonal of the parallelogram of which AB, AD are adjacent sides. (ii). The two first forces act together in a straight line and the force $2\sqrt{7}$ directly opposite to them. (iii). 1 and 4 act at right angles, and $\sqrt{17}$ opposite to the diagonal of the parallelogram of which the former are adjacent sides.

2. Suppose BC vertical; then the tension, thrust and weight are proportional to AB, AC, BC. Hence tension $=200\sqrt{3}$, and thrust $=400$.

3. The angle between the directions in which the forces act is 120°. Hence the required forces must act along one side of the triangle and opposite to the other, and will be equal to the other two forces.

4. $P=\frac{W}{16}+\frac{1}{16}+\frac{1}{8}+\frac{1}{4}+\frac{1}{2}$; or $16P=W+15$.

$$2\tfrac{1}{2}=\frac{45}{16}+\frac{\text{wt. of pulley}\times 15}{16};\ i.e.,\ \text{wt. of pulley}=-\frac{1}{3}.$$

We suppose the pulleys are lighter than the surrounding medium, and therefore are buoyed up with a force $=\frac{1}{3}$ lb.

5. Let a, b be the lengths of the arms and x the weignt of the substance. Then $ax=bm$, also $bx=4an$; $\therefore abx^2=4mnab$ or $x=2\sqrt{mn}$. Also $\frac{a}{b}=\frac{bm}{4an}$, or $\frac{a^2}{b^2}=\frac{m}{4n}$, or $\frac{a}{b}=\frac{1}{2}\sqrt{\frac{m}{n}}$.

7. The wood is buoyed up in the water with a force of 1 lb. Hence wt. of water displaced by wood $=1$ lb. + wt. of wood $=5$ lbs. $\therefore$ sp. gr. of wood $=\frac{4}{5}=.8$.

8. Let $x=$ required temperature Fahr. Then $(x-32)\frac{5}{9}=$ this temperature expressed in Centigrade. Hence $x=3(x-32)\frac{5}{9}$, or $x=80°$.

9. Vol. of cube $=\frac{27}{8}$ cub. ft., surface $=\frac{9}{4}\times 6=13\frac{1}{2}$ ft.; depth of its centre of gravity $=1\frac{3}{4}$ ft.

$\therefore$ pressure on surface $=13\frac{1}{2}\times 1\frac{3}{4}\times 1000$ oz. $=23625$ oz.

Downward force = upward press. of displaced fld. — wt. of cube $=\frac{27}{8}\times 1000-\frac{27}{8}\times 1000\times .75=\frac{27}{8}\times 1000\times\frac{1}{4}=843\frac{3}{4}$.

Want of space compels us to hold over our correspondence until next month's issue.

Practical Department.

ELOCUTIONARY STUDIES.

BY RICHARD LEWIS, PROFESSOR OF ELOCUTION, TORONTO.

The Trial Scene—Merchant of Venice.

Schlegel has pronounced the "Merchant of Venice" to be one of the most perfect of Shakespeare's works; and it may be safely added that in no other dramatic production of any author can there be found a single scene equal in dramatic effect, in completeness of design, in the absorbing interest of the plot, but, above all, in the varied manifestations of character, to the Trial Scene. It is, as the same critic observes, "in itself a perfect drama, concentrating in itself the interest of the whole." It is these high qualities that commend the Trial Scene as an admirable study to the elocutionist. Criticisms, commentaries, philological notes, and explanations of difficulties will aid the end in view. But the elocutionary study takes higher ground than these. The most important passages of this or any other dramatic scene depend upon a just understanding and vivid truthful conception of the characters; the analysis of their mental condition as they speak must be realized, to represent what Shakespeare has created, by tones of voice and facial expression, by the glance of the eye and the silent eloquence of the hand. It is the study of human nature when hatred and terror and justice and mercy meet in mortal conflict, and are manifesting their most awful or their holiest attributes.

The principal characters in the scene are Shylock, Portia, Antonio the Merchant, and Bassanio the husband of Portia. It is scarcely necessary to describe the special characteristics of each of these persons. Portia, the impersonation of womanly intellect of the highest order, and of womanly loveliness which surrounds and pervades and guides that intellect, so as to take from it all the sternness and repulsiveness which mere intellect without amiability tends to inspire, has been described by no commentator with more force and eloquence than Mrs. Jamieson. But the student of Shakespeare must act rather upon his own judgment, guided but not governed by critics; and a just reading of the play will be the best preparation for the study of Portia, when she takes upon herself the office of advocate in the judgment hall. Before entering upon the analysis of the scene, I must, however, give a brief view of Shylock and Antonio. Before the time of Macklin, who was a contemporary of Pope, the character of the Jew was utterly misconceived, and his impersonation was assigned to a low comedian, who, with grimaces and buffoonery, excited laughter and mockery where terror and aversion only should be awakened. I cannot account for this strange conception of a character whose language is so marked by the eloquence of malignity and whose burning hatred of his Christian persecutors becomes sublime in its very fervor; unless we are to understand that the public prejudice and injustice, which almost justify the malice of Shylock, prevailed long after Shakespeare's time, and forbade the people to believe a Jew could feel the sense of wrong so deeply as to have passions aroused which in their power commanded respect because they excited terror. But it is certain that when Macklin threw all the energy and poetry of tragedy into his impersonation, Pope instantly appreciated the just conception which the actor, and not the commentator, had formed, and exclaimed,

"This is the Jew
That Shakespeare drew."

From that time the Merchant of Venice has continued to be one of the most popular of the Shakesperean dramas, and Shylock has held rank amongst the highest of tragic representations. But commentators have passed from one extreme to the other in the estimate of the character, and now generally unite to pronounce him utterly cruel, vindictive, bloodthirsty and avaricious. But the avarice was rather an instinct of self-preservation than a vulgar greed of money. There was no justice nor mercy for the Jew in that persecuting age. Scorn, contempt, fraud, robbery and the *auto da fe* conspired to bear down his race; and all the Christian nations of the earth regarded it as a Christian duty to rob and cheat and persecute the people whose financial skill was often indispensable to their commercial prosperity and their national existence. Hatred and revenge seem to be the master passions in the nature of Shylock; but when the student has read that indignant reply to Antonio, in which he recounts the intolerable wrongs, the meanness of the persecutions which Antonio and his noble friends had been in the daily habit of pouring on the Jew because he was defenceless, he must admit that, from a human and Jewish point of view, the hatred and the revenge of Shylock were the inevitable results of injustice and of that resentment which the sense of wrong excites in all men, especially when they feel as Shylock felt, that they are in mental powers superior to their persecutors. Of course, I form this view from the Jewish standpoint, and with the object of aiding the student rightly to comprehend the character. The highest elocution is that which gives truthful expression to the language which embodies thought and passion, and the student must have no antipathies, but only the fullest sympathy with the character he is to represent.

Antonio is a character of less importance and difficulty. But commentators are disposed to give him all the qualities of generosity, liberality and manliness, which they deny to Shylock. He is generous to his friends. But he who could trample upon the weak, and cast every insult upon a persecuted race because it was helpless, was wanting in some of the highest qualities of true manliness. When Shylock says:

"You call me misbeliever, cut-throat dog,
And spit upon my Jewish gaberdine,"

there was not only cause to justify hatred but to depise the persecutor. During the trial scene the better qualities of Antonio are exhibited. He neither whines nor trembles before his unrelenting enemy; and as it is this manly bearing which redeems him from much that is mean in his character, it is from this aspect that he must be represented in this scene.

I must here state that the study of this scene is founded upon the regular play, not upon the mutilated abstract of it in the Fifth Reader.

In the opening of the court, the Duke, with great condescension and dignity, appeals to the mercy of Shylock. All that can be said about the delivery of his speech is that it simply demands calmness marked by an expression of respect for the Jew and of sympathy with Antonio in the period under which he lies. But there must be an instant change of tone and manner in the reply of Shylock. Appealing only to law, and relying on the right which justifies his demands, his bearing is stern, commanding and relentless. He speaks as one who neither expects nor intends to show mercy; and from that point of view, arguing simply on the legality and the justice of his claim, his defence is unanswerable. In the utterance of the oath,

"And by our holy *Sabbáth* | have I *swòrn* |
To have the due and forfeit of my *bònd*"—

he must, with eyes and hands uplifted, assume all the religious solemnity which as a Jew Shylock feels for that Sabbath; while in the second line his inflexible purpose is uttered in loftier tones, marked by a sternness of hatred and a merciless determination which become grand in their very terror. To give effect to both lines, pervaded as they must be by the suppressed passion, the words must

be uttered in slow time, marked by that tremor of voice in which all suppressed passion is spoken. But he knows how vain the oath and the threat of a Jew must be before such a tribunal, and so with admirable tact he at once assails his judges in their weakest point. As a trading community whose very prosperity depended on the fidelity of their laws and relations with "aliens," he appeals to the city's charter and freedom.

"If you *deny* ít | let the danger | *light*
Upon your *chàrter*—and your *city's freèdom.*"

Here again he changes his manner. There was the religious solemnity of an oath followed by the determination to pursue his vengeance. With that his judges had no sympathy. But here in this warning he is representative, with a powerful constituency; and so his manner changes, and is marked by greater dignity and the consciousness of superiority.

"You'll ask me—*why* | I rather choose to have
A weight of *carrion flesh (contemptuous)* than to receive
Three thousand ducats *(very slow).* I'll not *ànswer* thát:
But say, it is | my *humour:* is it answèred?"

A falling inflexion on "answered" will be more significant of the satisfaction that he can carry his point. He knows his power, for the law is with him.

"What if my house be troubled with a *ràt.*"

Antonio is no more than "a rat" in his estimation—a thing that must be killed, and so the word is delivered with an expression of hatred and loathing.

"And I be pleased to give *ten* thousand ducats
To have it *bàned?* What, are you answered yét?"
Some men there are | love not a gaping *pig;*
Some that are *màd*—if they behold a *càt:*
"Now for your answèr."

Shylock feels at this point that intellect is triumphing over mercy. He delivers these words, and all that follow, with the imperious satisfaction of success; and, hurried along by the impetuosity of his malignity,—his contempt too for all opposition, his vehemence rises into the sublimity of passion, reaching its climax in the words "hate" and "loathing." The utterance of these words will be most effective by using the strongest aspirated emphasis, that is, a quality of voice in which the breath mingles with the voice like a powerful whisper, reaching its fulness on the word "loathing." Edmund Kean and his son Charles successfully imitated him, made the hearer shudder with the intensity of his hatred, as, in the manner described, he flung his impassioned malignity against Antonio.

"*Now* for your ànswer:
As there is no firm reason | to-be-rendered |
Why *hè* cannot *abide* a gaping *pìg,*
Why hé | a harmless | necessary *cát;*
So can *I* give nò reason, nor *I will not,*
More than a lodg'd | HÀTE | and a certain LOATHING
I bear *Antonio,* that I follow thus
A losing suit | against him. Are you ànswered?"

The final question must end with the falling inflection, as if Shylock had said "That is my answer."

"*Bassanio.* This is no answer, thou unfeeling man,
To excuse the current of thy cruelty."

Shylock next turns to Bassanio with an expression of utter contempt in his aspect and voice, which changes to the fiercest hatred and suppressed anger in the latter part of the dialogue.

"*Shylock.* I am not bound to please THÉE with my answer."

A rising inflection is better than a falling on "thee," because a falling inflection would indicate contrast and defiance, while the rising inflection, in this case, with the tone prolonged, best expresses mockery and contempt.

Bassanio. Do all men *kill* the things they do not *love?*
Shylock. *Hates* any man the *thing* he would not *kill?*
Bassanio. Every offence is not a *hate* | at first.
Shylock. *Whát* | would'st thou have a SERPÉNT STÌNG
thee TWÍCE?"

It is impossible to describe the precise manner of delivering this line. When uttered by the Keans, it fell on the ear like the hissing of a serpent in the act of piercing its victim with its poisonous fangs.

Nothing marks the delivery of Antonio's reply but a calmness and dignity of tone, expressive of resignation to his fate. But Bassanio again interferes with a liberal offer to bribe Shylock, whose answer, full of scorn and defiance, is given with slowness but fierce energy, indicating a resolution unshaken as a rock.

Bassanio. For thy three thousand ducats here is *six.*
Shylock. If every ducat | in six thousand ducats
Were in *six parts,* and *every part* a DUCAT
I WOULD NOT DRAW THEM. *I would have my bond.*

In the speech that follows, Shylock again defends his motives and conduct with a logic which, viewed from the Jewish standpoint, cannot be answered. His manner should, however, be calmer and more dignified. He is addressing the Duke, and he is conscious that in reasoning on his claim there is none in the court that can reply to him.

Duke. How shalt thou hope for *mèrcy, rend'ring* none?
Shylock. What *judgmènt* shall I dread, doing no *wròng?*
You have among you many a purchased *slàve,*
Which like your *àsses* | and your dògs and múles
You use in abject and in slavish parts,
Because | you *bought* them.

The force of the argument evidently lies in the fact that as Christians robbed human beings of their rights because they had bought them, he was acting only on the same Christian principle. But the reading, especially in the simile, is expressed with bitterness and contempt for their inconsistency. Hence the words "asses" and "dogs" receive this emphasis.

Shall I say to you,
Let them be *frée—màrry* them to your *heírs?*
Why *swèat* they | under *burthéns?* let their *bèds*
Be made as *soft* as *yoúrs,* and let their *pàlates*
Be seàsoned with such *víands?*

The series of sentences that follow "Shall I say to you" are all objects of this sentence, and as objects they must each end with the inflection which any single object of "say" would take Besides, a change of inflection on the object would be inconsistent with the excitement under which Shylock presses this argument.

You will answer,
The *slaves* are *ours*—So do *I* answer *yòu:*
The pound of flesh which I demand of him,
Is *dearly* bought; 'tis MINE—and *I will* HAVE *it.*

The last part of this line must be delivered in tones full of force, firm, resolute as the will which dictates them. There must be a very terror in their utterance—the terror of the fixed and cruel revenge which pervades them.

"If you deny me, *fie* upon your *law!*
There is no *force* in the decrees of Venice."

Utter these words slowly and deliberately so that they shall fall ominously, warningly, and rebukingly on the ear.

"I stand for judgment: ANSWER; shall I *hàve* it?"

This again is a question which, like a preceding one, is not one of inquiry but command, and therefore takes the falling inflection, while the whole statement is uttered with imperious dignity prompted by a sense of right and superior power.

The dialogue that follows is unimportant. The friends of Antonio endeavour to support him. Then Nerissa, the waiting maid of Portia, disguised as a lawyer's clerk, enters the court with a letter from Bellario, an eminent lawyer, whom Portia had consulted. In the meantime, as the Duke is reading the letter, Shylock bends his knee to the floor, and with deliberate coolness sharpens his

knife. The text would suggest that this act was done upon the sole of his shoe; but as that mode of "whetting" the knife is not very graceful, the fashion of the great actors has been to sharpen it by sweeping it in wide ranges over the stage floor, not rapidly, but with slow and formal movement. The text is thus sacrificed to stage effect. Of course when the scene is given as a reading all such action is unnecessary.

Bassanio. Why dost thou whet thy knife so earnestly?

Shylock. (He pauses a moment, and not deigning to look at Bassanio, but pointing with terrible significance to Antonio, answers)

To *cut* the *forfeiture* from *that* BANKRUPT there.

Gratiano. Can *no* prayers pierce thée?

Shylock. Nò,—none that *thou* hast wit enough to máke."

The reply of Gratiano is marked by fervid indignation, but listened to by Shylock with contemptuous indifference, and his answer, which he gives, tapping the bond with his knife, is cool, as if conscious of his power. But, as a plaintiff who has a weightier duty than to dally terms with a youth, he resumes his dignity, which contrasts so finely with his flashes of scorn, as he utters the words

"I stand here for law."

I reserve the remainder of the review for another paper. Portia will enter upon the scene; and as she is in all respects equal in importance to Shylock, a careful analysis of her character, and a full knowledge both of her motives and her plans will be necessary.

TEACHING SPELLING.

BY A. A. MILLAR.

1. Arouse the pupil's pride. Let him once feel that bad spelling is a disgrace, and half the battle is won Children should be taught to avoid a wrongly spelled word as they would a contagious disease. At the same time they should look on correct spelling as a matter of course, and as not, in itself, meritorious. A great cause of poor spelling is the prevalent notion that it does not matter how a word is spelled so that its indentity be not lost. When pupils learn that intelligent readers measure the culture of the writer of a letter by his spelling, the first great obstacle to teaching spelling is removed

2. Spelling should be taught in classes as a separate study. It will do to depend upon other recitations in this particular, when it will do to teach reading in connection with the grammar class solely, or when the study of geography can be properly confined to the use made of it in teaching history. Not only should spelling be taught as a separate study, but lessons should be assigned in advance of the recitation, that opportunity to study them may be had. Primary pupils cannot study in a better way than to write the word of the lesson on their slates, and the words of the reading lesson should constitute the spelling lesson. When the lesson has been repeatedly copied from the book, let it be written from dictation, and afterwards spelled orally. Care is to be taken that as few words as possible be misspelled, for errors are very like to be repeated. Let words in common use be first taught; words to which pupils can attach some meaning, giving new words as their fund of information increases. Merely technical words had better be avoided until there is a need for them. Besides these separate classes, all recitations should be, to a certain extent, recitations in spelling. When a new word occurs, have it spelled and defined. If this cannot be done, there is no use of the pupil who fails going further in that recitation until he consult the dictionary.

3. Pronunciation—that is, correct pronunciation on the part of the teacher, is a powerful aid to the study of spelling. In dictating words, many teachers are apt to pronounce so plainly as to be incorrect; each syllable being enunciated with labored distinctness, and an utter disregard for the laws of pronunciation. If the pupil is unable to spell a word, he has only to say that he does not understand it in order to have it so pronounced as to leave no doubt as to its orthography. Of course, he will miss this same word the next time he has occasion to use it. Carelessness of pronunciation on the part of the pupils cannot be too carefully guarded against. We spell as we pronounce—to a great extent. If *part-i-ci-ple* be pronounced with three syllables, it will be spelled with three syllables; and if *perspiration* be pronounced as if the first syllable were *pre*, it will be spelled in like manner.

4. A fourth means to correct spelling is composition. A list of words is assigned for a lesson; the recitation to consist of the correct placing of these words in sentences. This is a very useful means of teaching the orthography and use of words pronounced alike but spelled differently, and of different meaning. How often is the word *principle* used when *principal* is meant, and *vice versa*! So *cur-rent* is used for *cur-rant* and the reverse. The argument for teaching the spelling of words only in connection with their meaning applies especially to this class of words. The spelling of this examination paper should be carefully scrutinized and misspelled words noted. If it be understood that these errors will affect the standing, carelessness in spelling will be effectually done away.

5. Good penmanship is a most efficient teacher of spelling. Many a person writes a word poorly because he is not certain of its orthography, and his penmanship prevents detection. A misspelled word looks worse when well written than if only half scrawled. I have seen the word *to-geth-er* misspelled many times, but never did it look so utterly out of place as when it appeared in the rounded characters of a well-known writing teacher. A gentleman who stands high among the teachers of Wisconsin, in writing the diphthongs *ei* and *ie*, makes both letters exactly alike, and places the dot above and just half way between them. There is nothing to be insisted on more strenuously than plainness in writing. It will prevent attempted deception as well as a great waste of time.

6. Rules for spelling have a place among the means of teaching this art. Just what their relative importance may be, is a matter of opinion. Time spent in the mere memorizing of rules is time wasted. Yet this is just what many think to be their use. Their application to the spelling of certain classes of words may be very valuable, both as a means to correct spelling and a matter of discipline. The application of rules to the spelling of derivatives must be practised until it becomes habitual to the pupil, or the rules of no account. But there is a large class of words that is above all rules, and that defies all law. Such words as *deleble* and *indelible*; as *seige* and *seize*. The only way that I know to dispose of such words is to *learn* their spelling, just as the multiplication table is learned. They must be taken by force and compelled to submit.

7. Pupils should keep a list of all misspelled words, and from time to time review them. Of course the teachers will note all such words, and frequently bring them to the attention of pupils.

8. And last, but by no means least, let the habit of consulting the dictionary whenever any doubt arises, be formed as soon as possible—not an unwilling consultation, as is now usually the case, but a willing and cheerful search after truth. This habit cannot be overestimated. If it be once acquired, there is little fear that misspelled words will find a place in any composition.—*New York School Journal.*

SUGGESTIONS TO TEACHERS.

I. AS TO PREPARATION OF LESSONS.

Make each lesson which you assign a subject of careful study respecting the following points:

1. What is the connection of the topic with a preceding one? What divisions of the topic are desirable to make in teaching it? What are the dependences of the parts upon each other?

2. What does the lesson contain which will be new to the pupil—what definitions, operations, rules, explanations or principles? How are these best presented?

3. What difficulties does the lesson involve? What are some of the ways of treating them? What is the best way?

4. What are the most essential things to be had in view—the important points to be worked to—in the lesson?

5. What opportunity does the lesson afford for drill in numerical processes? What for exercise of memory? What for language training? What for development of the reasoning powers? What is the value of the lesson as a means of education?

6. What scheme or plan of work will best meet the requirements of successful teaching of the lesson?

7. Know your part perfectly. Know it in a broad and generous way.

II. AS TO CONDUCTING RECITATIONS.

1. Provide occupation upon parts of the lesson for each member of the class. While some work at the blackboard, let those in the seats also have something to do. Keep the work moving all along the line.

2. Avoid wasting time on matters of little importance. Hold well to the essential points. Be on guard against division from main issues. Know your scheme thoroughly, and keep to it.

3. Consider each lesson a means, and each recitation an occasion of accomplishing certain definite educational results. Observe constantly how well those results are being realized. Do not work with eyes bandaged. See clearly all the time what is to be done, and how best to do it, and note the outcome.

4. Keep account of the progress of each member of the class. Be patient with those who, though they may not do as well as you desire, are yet doing as well as they can. With the lazy and indifferent your skill will need to be at its best.

5. Be attentive to the order of the class, to the manners of the pupils in recitation, to their language and to their advancement in every respect to which your work with them and personal influence may contribute. Remember your office is to teach, and not merely to hear lessons.

6. Do your work heartily. Do it in a live and vigorous way.

III. AS TO ASSIGNING LESSONS.

1. Give the last five minutes of the hour to the assignment of the next lesson. Be judicious as to length of lesson assigned.

2. Direct attention to the most important things to be noticed in the preparation of the lesson.

3. Let a part of each day's work be a review of the important points of the lesson of the previous day.—*C. F. R. Bellows, in Educational Weekly.*

MEETING OF THE AMERICAN FROEBEL UNION.

The first of a series of public conferences, to be held by the American Froebel Union, which are intended to review the work of Kindergartens in America, by the means of lectures and discussions by prominent men and women who are most interested in this work, and so help the success of the Kindergarten in this country, was held at New York recently. The meeting was called to order by Dr. Henry Barnard, of Hartford, Conn., who presided. On the platform was Thomas Cushing., the principal of the Chauncy Hall School, of Boston, and Miss E. P. Peabody, the president of the Union.

Miss Peabody began the conference by recounting the history, present condition, and aims of the Union, and said :

The first and last aim of our society is to make a high standard of training of the kindergartens,—not merely in the manipulation of the work, and the gifts of solids, planes, lines and points, by which technical and intellectual education is prepared for; but by the study of the three-fold nature of the child. Three years' experience has proved to us that the constitution at first adopted aimed at something we cannot compass, and which must be remitted to local societies, which can meet monthly for mutual instruction. and on which the responsibility of giving certificates to the good ones must rest. On the 9th of March, therefore, the life members, by person and by proxy, met, and remodelled the society, which in future will hold general conventions, only at longer intervals, at the discretion of the president ; the next one, perhaps, not until April 21, 1882,—Froebel's centennial birthday. But the president shall receive the papers and reports of the local societies, and give all the thoughts of value brought forward in them in a volume called the "Annual Message," which each year shall be sent to all the paying members.

Thomas Cushing, lately of the Boston Chauncy Hall School, spoke of the operation of the Kindergarten in his school, and said it was, in his opinion, an efficient foundation to a perfect system of education.

Mr. Wm. T. Harris, Supt. of Public Instruction in St. Louis, Mo., gave an able paper, of which the following is a mere outline:

The lofty ideal of the disciples of Froebel,—the moral regeneration of the race,—may, it is true, be claimed by all educators ; and the high-school teacher or the college professor comes into relation with the pupil when he has begun to demand for himself an explanation of the problem of life, and it is possible, for the first time, at this age to lead him to insight. This example the teacher of the youngest pupils has ; that she may give them an influence that will cause them to continue their education in after life.

It must be conceded that the age from four to six years is not mature enough to receive profit from the conventional and the disciplinary studies of the schools. But the child of four or five years is in a period of transition out of the stage of education which we have named "nurture." Through play the child gains individuality ; through caprice and arbitrariness the child learns to have a will of his own. It is at this period of transition from life in the family to that of the school that the kindergarten furnishes what is desirable, and, in doing so, solves many problems hitherto found difficult of solution.

I have my own grounds for believing that the kindergarten is worthy of a place in the common-school system. It should be a sort of sub-primary education, and receive the pupil at the age of four or four and a half years, and hold him until he completes his sixth year. Besides the industrial training, there is much else in the kindergarten which is common to the instruction in the school subsequently, and occupies the same ground. There is instruction in manners and polite habits, and a cultivation of imaginary and inventive power. The cultivation of language is also much emphasized in the kindergarten.

The paper closed with a discussion of the practical conditions necessary for success,—expense, supply of teachers, duration of school hours, school furniture and other essentials.

Miss Peabody read a paper by Miss Anna Buckland, on "The Use of Stories in the Kindergarten."

Froebel notices that, of all the mental faculties, the æsthetic is one of the first to unfold in the mind of the child. The first perceptions of the child are of beauty. We find, therefore, in the kindergarten, that the means are provided by which the æsthetic faculty may be developed and trained to a keen perception of beauty in form, color, and sound, as well as in character and life. Artistic designs, lessons on form, combinations of colors, drawing, modelling in clay, flowers, and beautiful natural objects, music, poetry, and imaginative literature, are all provided as necessary to the correct education of the child.

Prof. Felix Adler made an address on the reasons why the children of the poor are in greater need of the kindergarten system than the children of the wealthy.

The children of the poor, most of all, need the humanizing influence at the age of children in the kindergarten. The kindergarten is more necessary to the poor than to the rich, because it develops the elements of skill. The poor need this kindergarten training most because they are less able to obtain an education than the rich. This fact ought to stimulate benevolent and charitable people to realize the good that may be done in this work.

Dr. E. B. Seguin, formerly of Paris, France, spoke of the necessity of keeping a strict watch upon the first impressions that are made upon a child's mind.

Professor Bachelor, of Boston, spoke on the "Analogies of Tone and Color," with an explanation of how little children are being taught music by the help of color.

E. A. Spring, of Perth Amboy, N. J., gave an address on "Modelling as an Occupation of the Kindergarten :"

Little children, even as young as three years, will often make shapes in moist clay, and it might be called a natural process. Froebel used it as an essential part of his system of human development, and several simple exercises were given to render clear to the little child, during the kindergarten age, some of his most important principles. Froebel gave the children the clay ball and the cube. From these all the geometrical figures can be formed. The cylinder is the intermediary, and three steps are sufficient to carry the child from the ball to the cube. The details of modelling are not to be considered. One must preserve the spirit, and must pay attention to the arrangement of the general masses.

This closed the session of the Union. Miss Peabody said that it was not likely that another convention would be held before 1882.

THE EDUCATION OF ENGLISH GIRLS,

English girls are taught—or were in my time—by a kind of system which tends to multiply "accomplishments" rather than useful knowledge. A certain routine of teaching is gone through, and you come out of the school-room with a society varnish intend-

ed to do duty until marriage, at which period custom allows you to dispense with surface accomplishments, and devote yourself to the realities of life, mitigated as they are for the well-to-do. On the other hand, the moral atmosphere of the English home education is superior to that of American education in general. Girls are less forward and more respectful; they grow into women more slowly and ripen better; they are physically stronger, and therefore have simpler tastes; and as to society, they do not know what it means before at least the age of seventeen or eighteen. American girls have certain advantages, however, which custom denies young Englishwomen of good position; they are not forced by an unwritten law to go into society and play their part in it, while the English girls have no choice. The "upper ten thousand" must marry or become "blue-stockings" before the world agrees to let them alone. A young married woman may, if she choose, plead home duties as an excuse for a quiet, useful, pleasant, and studious life, uninterrupted by any but the necessary "county" civilities, which are not burdensome; but young girls are not supposed to have such duties. Parents, even when sick themselves, are loath to let the chances of the London season pass by their daughters, and depute any safe chaperon, the nearest female relation if possible, to take their girls to all the balls and parties. The rudimentary education furnished to women of the higher classes has perhaps something to do with the prevalence of "fastness" among a part of them, while to others it becomes the base of a real, later self-education, the growth of reading, observation, and thought.

—The puzzle of the period has its educational uses. It has been subjected to the scrutiny of several able mathematicians, and Professor Tait of Edinburgh has given his attention to the subject. At a recent meeting of the Edinburgh Royal Society, he read a paper on "The Theory of the Fifteen Puzzle," which is at present perplexing so many heads and fingers. The Professor began by stating that since he had given notice of his paper to the Council two papers had appeared in the *American Journal of Mathematics*, in which (as was only to be expected) most of what he had to say was anticipated. He showed that all the essential features of the puzzle were to found in a board of four squares only with three pieces, say A, B, C. It would be seen that no possible motions could disturb the cyclic order of these—*i.e.*, they could only be a, b, c, or c, a, b, or b, c, a, and not anyone of a, c, b—b, a, c—c, b, a. Of the first three, anyone could be changed to another by two interchanges. Hence, all that was necessary in order to find whether a particular case of the puzzle could be solved or not was to find how many interchanges would bring it to the normal form. If that number be even, the problem was possible; if odd, impossible. Dr. Crum Brown had called those cases which were solvable Aryan arrangements. These involved an even number of interchanges; the others, or Semetic, an odd number. Any odd number of interchanges made an Aryan arrangement into a Semetic one, and *vice versa*. Hence, when they could not solve a particular case, they had simply to turn the 6 and the 9 upside down, and all was right. We hope that our readers after this will plunge among the figures with the certainty of immediate success, and that they will not have the smallest difficulty in disentangling either a Semetic or an Aryan arrangement.—*The Schoolmaster*.

Notes and News.

NOVA SCOTIA.

The Teachers' Association for the County of Cape Breton held its first meeting at Sydney, on June 30th and July 1st. A. McKinnon, Esq., Inspector of Schools, presided, with J. A. Armstrong, Esq., as Vice-President, and B. McKittrick, Esq., B.A., as Secretary-Treasurer. Seventy-one teachers enrolled their names as members of this Association. The President, after making a few introductory remarks, introduced Dr. Allison, Superintendent of Education, who expressed his pleasure at meeting such a large body of intelligent teachers, pointed out the advantages arising from such meetings, and encouraged those present to take an exalted view of their profession. He was followed by Mr. C. P. Moore, who read a carefully prepared paper on "School Management." The paper was discussed at some length by the members of the Association. Mr. M. McKinnon, M.A., then read an elaborate essay on "Teaching of Language." He advocated some sweeping reforms, some of which were endorsed by the Superintendent and others. Mr. J. A. H. Rindress opened the afternoon session with a valuable paper on "Discipline." He showed the importance of good order, and regarded the eye as the great controlling power. A very instructive illustrative lesson in "Algebra" was given by Mr. D. R. McLennan. During the day, the Rev. Messrs. Smith, Murray and McMillan visited the Association. On Wednesday evening the Temperance Hall was crowded to listen to an educational address by Dr. Allison. He traced the progress of education in Nova Scotia till the present time, and strongly urged every one to secure the best possible culture. The address was frequently applauded. Thursday morning's session opened with an "Oral Lesson in Arithmetic" by Mr. B. McKittrick, B.A., Principal of Sydney Academy. A very clear explanation of how to teach Notation and Numeration was given, and some general observations made upon the importance of this branch thoroughly taught in our public schools. This paper produced a very spirited discussion, in which a large number participated. Mr. J. N. Armstrong followed with an interesting paper on "Incentives to Study." To secure diligent preparation from pupils, he believed the teacher must study himself. Mr. C. W. Blackett read a well-written paper on "The Teacher's Rewards." While he believed that teachers should be well and promptly paid, he was convinced that one who regarded merely the "almighty dollar" was unworthy of the position. Rev. Messrs. Rendall, Coffin, Farquharson and Johnson responded to the invitation of the President, and gave excellent addresses. The programme being completed, general remarks were made by Inspector McKinnon, Principal McKittrick, Messrs. Rindress, Moore, Armstrong, Kennedy, Blackett and Morrison. The first meeting proved a most gratifying success, and the teachers expressed themselves greatly benefited by its discussions. The Association adjourned to meet at North Sydney, June, 1881.

The Encœnia of King's College for 1880 took place on June 24th, and passed off in a most successful manner. None of the more prominent personages who have in past years attended these exercises—to wit, the Lieut. Governor, General, Admiral, or Chief Justice—were present, but a goodly number of visitors of a lesser degree repaired to a certain extent, at least, any deficiency in that particular. The exercises were commenced as usual with divine service in the old Parish Church. The talented President of the College, Canon Dart, preached a most excellent sermon from Proverbs, chap. 4, 7th verse. At noon the convocation services commenced in the new Hall of the College. The room was well filled with the *elite* of Windsor and surrounding districts, while the platform was graced with a goodly array of "wealth, learning and respectability."

The President commenced his opening address with appropriate reference to the deaths that had occurred in the ranks of the College during the year. He spoke in feeling terms of the deaths of Professor Howe, John Hind, Rev Dr. Cochran and Judge Bowman, and referred briefly to the services and talents of each of them. He alluded to the progress made since the last Encœnia, and stated that during the year the old library room had been converted into a laboratory and chemical lecture room.

The following students passed the required examinations for the Degree of Bachelor of Arts:

Rev. George Butler (Honors in Theology). F. W. Vroom (Honors in Classics). A. E. Silver, L. E. Brackin, W. C. Hind, and W. B. King.

The following prizes were then announced and distributed:

Cogswell Scholarship, Rev. G. Butler. Binny Exhibition, Mr. G. R. Martell. McCawley Hebrew Prize, Rev. George Butler. The President's prize for English rhymed heroic verse, Mr. G. J. Peters. Hon. Senator Almon's Welsford Testimonial, Mr. F. W. Frith. General Williams' prize for Mineralogy and Geology applied to mining, Mr. M. A. Curry. General Williams' prize for Modern Languages, Mr. W. B. King. Stevenson Scholarship, Mr H. Hensley. McCawley Classical Scholarship, Mr. F. W. Vroom. First Year Divinity Prize, Mr. F. W. Frith. Prize for Latin Verse, Mr. F. W. Vroom.

The following degrees were then conferred, with appropriate ceremonies:

MASTER OF ARTS.

James Liechti (*honoris causa*), W. J. Spencer (*honoris causa*), Rev. R. Smith, and Percy C. Scott.

BACHELOR OF ARTS.

J. O. Crisp, Halifax; W. H. Morris, Guysboro; F. W. Vroom, St. Stephens; T. R. Rutherford, Halifax; E. Jennings, Halifax.

Mr. Scott then read a portion of his essay, prepared for his Master's degree; Mr. Peters read his prize English poem, entitled "Montcalm"; and Mr. Vroom his prize Latin verses, all of which were warmly received.

Mr. Vroom ended his part of the programme by delivering an excellent valediction, in a very creditable manner.

Short and appropriate speeches were then made by Rev. Chancellor Hill, Hon. W. B. Vail, and his Lordship, Bishop Binny.

The closing exercises of St. Mary's College were held on the 16th of July, in the hall of that Institution. His Grace Archbishop Hannan presided. The proceedings were of an interesting character. Among the audience were Sir Edward and Lady Kenny, and many leading citizens. A new feature was introduced into the examination, viz.: the examination of classes in the Latin Classics. All the exercises were pronounced good. An address from the students to the Archbishop, as patron and visitor of the College, formed an interesting part. The Archbishop in replying thanked the students for their expressions of goodwill. He considered that never since its organization, more than forty years ago, had St. Mary's College been under the direction of a more efficient faculty than now. His Grace urged parents not to abridge unnecessarily the educational privileges of their children. He intimated that certain important improvements were in contemplation. The Rev. Canon Woods, an ex-president of the College, referred in very complimentary terms to the abilities and successful labors of the present staff of Professors.

The public exercises connected with the close of the annual session of the Provincial Normal School were held in the large assembly hall of the new edifice. A large audience was in attendance. Among other visitors were His Honor the Lieutenant Governor, the Superintendent of Education, several of the Provincial School Inspectors, and a large number of High School Principals and other teachers attracted to Truro by the Educational Association to open on the following day. Excellent music was furnished by a select choir of students. The teaching exercises by the pupil teachers were as follows: A class in Navigation by Miss Boner, of Shelburne; a class in Nova Scotian History by Miss Quinlan, of Shelburne; a class in Cubic Measures by Miss Dickie, of Truro; a class in Botany, by Miss Calkin, of Truro; A class in Chemistry, by Mr. Jos. Crone, of Colchester; a class in Agricultural Chemistry, by Mr. White, of Kings; a class in Arithmetic, by Mr. Beckwith, of Kings; a class in Geography, by Mr. Lewis, of Colchester. The style in which this practical work was done merited and received high enconiums. The Governor General's medals were presented by Governor Archibald—the silver to Miss Lewis of Onslow, the bronze to Miss Quinlan, of Shelburne. The subject of the competition essays was "The qualifications of a Teacher not included in the Syllabus." The Superintendent of Education stated that all the essays presented were exceedingly meritorious, and that between the two selected ones the difference was slight indeed. The Lieutenant Governor and Superintent of Education made short addresses, congratulating the Principal, Professors, and Province on the successful work of the year. During the session closed, the attendance has reached its maximum, altogether 150 pupil-teachers have been enrolled, and the average attendance has been upwards of 100. Five Superior professional certificates have been awarded, to Misses Lewis, Boner, Calkin, Dickie, and Mr. Beckwith; 51 *good* certificates, and 26 *fair*, 82 in all.

Next month's notes will contain a full report of the Provincial Educational Association organized at Truro, on the 14th of July. The following is a list of officers, &c.: President—Dr. Allison, Superintendent of Education; Secretary—A. McKay, Esq., Principal Dartmouth High School; Assistant-Secretary—B. McKittrick, Esq., B.A., Principal Sydney Academy; Executive Committee—Dr. Allison, *ex officio*; Principal Calkin, *ex officio*; Inspector Cordon, Inspector Roscore, Prof. Eaton (Normal School); Miss Hamilton (Halifax); Miss Newcomb (Cornwallis); Principal McKay (Picton); Principal McKay (Dartmouth.)

NEW BRUNSWICK.

Our first item this month is the Encoenia of the Provincial University, particulars of which were not given in the July number. The customary oration in praise of the founders was delivered by Prof. Rivet, after which Mr. A. W. Wilkinson, of the Senior Class, read a portion of his prize essay on "The importance of increased attention to Agriculture." A portion of the Latin essay which won the Alumni medal was also read by its author Mr. John S. Harrison. The degree of B. A. was conferred on sixteen young men, the first three of whom were A. W. Wilkinson of Fredericton, J. M. Palmer of Gagetown, and H. B. Pickard of Fredericton. The latter has since undergone examination for the Gilchrist scholarship. Jas. R. Mace, B.A., 72, Principal of the York street Schools, Fredericton, received the degree of M.A. A new and interesting feature in the proceedings was the delivery of a valedictory address on behalf of the graduates of last year, by J. Douglas Hazen, B.A., '79.

Mr. G. Herbert Lee, M.A., delivered the Alumni Oration. It was announced that the subject for the Douglas Essay next year would be "The Prosperity and Fall of Venice."

The officers of the Alumni Society for the ensuing year are:—

President—Alfred B. Atherton, M.A., M.D.

Vice-Presidents—Loring W. Bailey, Ph. D., Rev. Chas. Paisley, M.A., Henry S. Bridges, M.A.

Secretary and Treasurer—James A. Vanwart, M.A.

Members of Council—F. E. Barker, M.A., D.C.L., Rev. G. G. Roberts, M.A., G. R. Parkin, M.A., G. H. Lee, M.A., Edward L. Wetmore, B.A., Wm. Pugsley, M.A., B.C.L., and Wm. Crocket, M.A.

Representatives to the University Senate—Wm. Pugsley, M.A., B.C.L., and Fred. E. Barker, M.A., D.C.L.

In the City of St. John and in Portland, the summer vacation commenced on the 7th July,—elsewhere throughout the Province, on the 12th.

The annual examination and presentation of prizes at the St. John Grammar School was an interesting occasion as usual. Under the popular Principal, H. S. Bridges, M.A.. and his coadjutor W. M. McLean, B.A., the school is said to be doing excellent work. The Corporation gold medal for classics was presented to Master Wilmer Duff, the Parker silver medal for mathematics to Master Mark Henderson, the Lorne bronze medal for English, to Master Herman Peiler. and prizes of books to eight other boys, for proficiency in various departments.

In the Leinster street school (D. P. Chisholm, Principal), in the Albert school, Carleton (John Montgomery, Principal), and in other schools in the city, the closing exercises drew numbers of interested visitors.

The High School at Fredericton was examined on the 9th July, in presence of numerous visitors. An interesting feature in the exercises was the reading of several of the pupils' essays. The Douglas silver medal for proficiency in the classics, and the Lorne bronze medal for highest general standing were both awarded to Master James M. Lemont, who was highly complimented, Master Owens received a prize of books for proficiency in mathematics. The staff of teachers in this school consists of G. R. Parkin, M.A., Principal, G. W. Fenwick, B.A., J. T. Horsman, B.A., and Miss L. J. Gregory.

The Carleton County Teachers' Institute met at Woodstock on the 24th and 25th of June, with an attendance of about fifty teachers. Inspector Gaunce was elected President, W. B. Wiggins, B.A., Vice-President, and Chas. McLean Secretary-Treasurer. Several valuable papers were read, and the discussions were lively and profitable. Music introduced at intervals added interest to the sessions. The evening session was largely devoted to singing, recitations and impromptu speeches. Perhaps there was rather too much of the *dulce* in proportion to the *utile* at this institute, but on the whole, the teachers seem to have been well pleased with their two-days re-union.

The Charlotte County Institute met at St. Stephen on the 8th and 9th of July, and after opening speeches by several gentlemen, elected the following officers:—Inspector Oakes, President, Jas. Vroom, Vice-President, Jas. D. Lawson, Secretary-Treasurer, J. B. Bogart, Assistant Secretaay. About seventy teachers were enrolled as members. Mr. Lawson read a paper on "The best means of applying the official course of instruction in ungraded schools," which was followed by an animated discussion, bringing out several of the practical difficulties experienced by teachers, and eliciting from the inspector satisfactory replies to a variety of questions. Misconceptions were corrected, and objections explained away, to an extent that perhaps surprised some who are not happy unless discontented. Other papers read were on "The influence of the Teacher on the school," by Mr. W. Camp, on "The place of Natural Science in the School Curriculum," by Mr. Bogart, and on "School Discipline," by Mr. G. J. Clarke. The teaching of the text book in Geometry was the subject of a paper by R. H. Lyle. Vigorous discussions followed the several papers. There were also practical lessons on colour and primary reading. At the evening session, specimens of the manual work of pupils were exhibited and criti-

cized. At some of the sessions, a choir favored the institute with music.

The Kent County Institute met at Kingston at the same time as that of Charlotte. About forty teachers were present. The officers elected were Geo. A. Coates, President, Daniel Gillis, Vice-President, C. H. Cowperthwaite, B.A., Secretary-Treasurer. We have not seen a very full report of the proceedings, but we learn from the St. John *Telegraph* that the following subjects were discussed, some being introduced by written papers:—"Are Educational Institutes a success?" "The Scope and Method of Lessons on Health as required by the course of instruction." "The Essentials of Good Order in schools." "Means of Mental and Moral Culture," a lesson on Geography, the Elementary Rules of Arithmetic, the Merit Book. As at Fredericton and St. Stephen, samples of manual work from the schools of the town were distributed for inspection by the assembled teachers. The work of this institute was held to be eminently practical and useful.

On the same days the King's County Institute met at Hampton. The teachers present numbered sixty, Inspector Wetmore was re-elected President, J. H. Wright, Vice-President, and Wm. Levinge, Secretary-Treasurer. The last named gentleman seems to have taken a prominent part in the work of the institute, giving two papers and an oral lesson, the subjects of which were respectively "How the study of Plant Life may be made interesting in school," "Industrial Drawing," and "Atmospheric Pressure and the Barometer." Mr. F. H. Hayes introduced the subject of Written Examinations; and one fact brought out in the subsequent discussion was that many teachers found great difficulty in getting their pupils to procure the necessary paper for such work. A paper on singing, by Miss Brown, and a lesson on Form, by Miss Bennet, were also on the programme. In the evening the Chief Superintendent, Dr. Rand, delivered a public address, of which we clip from the *Telegraph* the following account.

The speaker commenced his subject by pointing out the obligations and duties of parents in reference to the education of their offspring, calling attention to the fact that a true index of the greatness of a country may be had in the men that it produces. The kind of education that our country requires, he remarked, is that which will produce men and women capable of bringing themselves under the control of the will. He then took up the "Course of Instruction" for the Province, and the new regulations for school inspection. The criticisms passed on these throughout the Province were fully dealt with. He proceeded to show the relation that should exist between teachers, trustees and parents, the waste of force attending a frequent change of teachers, and the consequent loss to the community. These and other matters connected with the Institute brought the addresss of the chief superintendent to a close, when a vote of thanks was tendered him by the Institute.

The St. John County Institute also was in session on the same days, in the Exhibition Hall of the Victoria School. At the opening session Dr. Rand was present, and addressed the Institute by request of the President. The election of officers resulted in the choice of Inspector Dole, as President, Mr. G. U. Hay as Vice President, and Mr. J. M. Coyngrahame as Secretary Treasurer. A large amount of time was consumed on the first day in discussing points of order, and modes of procedure, the only practical questions taken up being "The place Latin should occupy in the School Work," and the teaching of colour to children. The discussion of the latter was continued the next morning, mixed up with further discussion on matters of routine, etc. Mr. W. H. Parlee read a paper on "The place of written examinations in the schools," arguing strongly in favor of written examinations. The subject was afterwards discussed at some length, *pro* and *con*, by members of the Institute, Dr. Rand, who had returned, also taking part. There was also conversation as to the Province of the Teachers' Institute and of the Educational Institute respectively, Dr. Rand pointing out that the latter was the place to discuss such matters as the course of instruction, text books regulations of the Board of Education, etc. Mr. McGinnis read a paper on Canadian History, Mr. Coyngrahame one on Drawing, Mr. Hay on "The beneficial effects of Museums in connection with High Schools." The four institutes meeting simultaneously exchanged friendly greetings by telegraph.

At the Chatham Grammar and High School, the midsummer examination took place on 9th July. Three pupils received certificates of graduation, one of whom, Master Ernest McKay, the winner of the Lorne medal for highest school standing, delivered a valedictory address. Other prizes were carried off by Thomas Narquis, Wm. Kerr, and Dicie Davidson.

The Educational Institute for the Province met in the Normal School Building at Fredericton, on Tuesday afternoon, the 13th July. This body, it will be remembered, is not a voluntary association of teachers, but is organically connected with the School System, and works under a simple constitution established by the Board of Education. The same is true of the county institutes. Membership is voluntary; Any member of a County Institute and any public school officer may become a member of the Provincial Institute by payment of a small annual fee. The objects in view are "the professional instruction and culture of its members, and the discussion of educational questions." While there is large liberty in discussion, the right of recommending or excluding questions for consideration by the Educational Institute rests exclusively with the Executive Committee, one half of whose members are permanently appointed *ex officio* by the Board of Education, and the other half are elected annually by the members of the Institute, Many at the recent meeting seemed to be ignorant of these facts.

The meeting occupied three days, and several of the sessions were very protracted. About 120 members were enrolled, but a large number of teachers and others were in attendance, some not qualified for membership, and others who preferred to share in the benefits rather than the burdens. Dr. Rand, Chief Superintendent of Education, presided over all the sessions. Mr. H. C. Creed, M. A., was re-elected Secretary, and Mr. J. D. Lawson was elected Assistant Secretary. At the last session but one, the elective members of the Executive Committee were chosen by ballot, viz.: S. C. Wilbur, B. A., of Moncton, H. S. Bridges, M. A., of St. John, G. R. Parkin, M. A., of Fredricton, J. A. Freeze, B. A., of St. Stephen, A. J. Denton, B. A., of Shediac, and John Montgomery, of Carleton.

Our space will not allow us further to detail the proceedings of this important assembly at present.

QUEBEC.

The chief interest throughout this Province in educational matters during the latter part of June and the beginning of July, especially in our towns and cities, is centred in the closing examinations for the scholastic year before the midsummer holidays in our Normal school, Academies, and Commissioners' Schools, and in the awarding of Academic honors and prizes.

In the Normal School, diplomas are granted to successful candidates, Academy, Model School, or Elementary, as the case may be. All these institutions are year by year advancing in efficiency, increasing in numbers, and attracting more and more the attention and support of the public as well as of advanced educationalists and lovers of learning generally.

Rewards for proficiency in the different branches taught are now becoming quite numerous in the shape of gold, silver and bronze medals. These are eagerly competed for, and form a strong stimulus to exertion and study on the part of the pupils. At the closing exercises of these Institutions there is a large attendance, especially in the city of Montreal, of the parents and public generally. In all that pertains to the instruction of the young, there are several men of distinction in that city who encourage in every way by their presence and speeches the schools of all grades, such as Dr. Dawson, Dr. Jenkins, Dr. McVicar, Dr. Robins, Canon Norman, &c.

Dr. Howe, Rector of the Montreal High School, stated in his Annual Report, that the result of written examinations showed better answers than formerly, that in the 3rd or lowest form, each division averaged an attendance of 35, the 4th 34, the 5th large, and that the 6th promised to be good for next session; that outside, the year had been marked by more than usual success; as in the graduating class of McGill College, out of 4 gold medals, three had been taken by High School boys; in the third year under graduating class, a High School boy of 1878 carried everything before him.

Master Gnaedinger, the 3rd boy of the 6th form, received the Murray silver medal, very handsome in design and workmanship, and Master Cahoes, of the same form, received the Murray bronze and the Lorne silver medal. Master Bluckader was the High School gold medallist.

In the Quebec High School, Master Ross gained the Lorne silver medal for classics, and Master Dunbar the Fry silver medal for English.

In the High Schools of Montreal and Quebec there have been for some time preparatory departments doing excellent work.

Principal Hicks presided at the annual distribution of prizes in the McGill Normal School. Beside him on the platform were

Doctors Dawson, Robins, Stephens, Sullivan, McVicar, Messrs. Lunn, Peter Redpath, and others. There was a large attendance of pupils with their parents and friends, and much interest was manifested in the proceedings.

The Rev. Canon Norman, M. A., D. C. L., examined lately the pupils in the Mackay Institute for deaf mutes, and reported most favorably on the system of teaching pursued and on the diligence and success of the pupils. The most advanced pupil, Master John Macnaughton, Quebec, can write English accurately and with taste, is a very good draughtsman in more than one style, and possesses a very creditable acquaintance with Scripture, English History and Geography. The proceedings wound up with a touching parting address by Master Macnaughton, by means of the sign alphabet, and by the hymn "Rock of Ages," given in signs by all.

The annual meeting of the Teachers' Association in connection with McGill College Normal School, was held lately in the Normal School Hall, Dr. Kelly in the Chair. There was a large attendance of city teachers. The secretary reported that over thirty additions had been made to the roll of membership, and referred to the very great interest manifested during the year in educational work. Reference was also made to the grand gathering of teachers in Quebec and to the very successful conversazione held in the month of March. The treasurer reported all debts paid and a balance in the treasury. The election of Officers for the ensuing year then took place and resulted as follows : President—Dr. Robins ; Vice-Presidents—Dr. McGregor, Principal Hicks, the Rev. E. J. Rexford, and Miss Carmichael ; Secretary—Mr. Campbell ; Treasurer, Mr. Parsons ; Council—Dr. Kelly, Professor Hicks, Messrs. Rowell, Keeland, McKercher, Pierson, Mrs. Fuller, and Misses Clarke, Derrick and Richardson.

Mr. Frank W. Hicks, Secretary to the Association of Protestant Teachers, has issued a circular announcing that the 17th annual convention of the Provincial Association of Protestant Teachers of Quebec Province will be held in Montreal on the 21st and 22nd of October next. Those who intend to read papers or to propose subjects of discussion are requested to notify the secretary as soon as possible, in order that the programme of proceedings may be arranged a short time before the meeting.

Copies of the report of the convention held at Quebec, in October last, may be procured, price twenty-five cents, from the secretary, and from Dawson Bros., Drysdale & Co., and J. O'Loughlin, booksellers, Montreal. The report extends to 135 pages, and contains the record of proceedings and all the papers read at the last meeting.

A grant of $500 per annum has just been made by the Provincial Government for the support of an English Journal of Education.

MANITOBA.

The Public Schools of the Province have just closed for the summer vacation. During the past week the examinations of the city schools have been in progress. They have been entirely in writing. The examiners were S. C. Biggs, B.A., Inspector of city schools, and Rev. Professor Hart, M.A., and the results reflect the highest credit upon teachers and scholars. Winnipeg has every reason to feel proud of her public school system. Her first public school was opened in 1871. It was held in a log building with a thatched roof; the teacher was W. F. Luxton, the present editor of the Manitoba *Free Press*, and the number of scholars about twenty-six. Now there are three public schools, two of them handsome buildings, and the third is being replaced by a building, now in course of erection, which will be quite equal to the other two. There are ten classes, and an average attendance of about 500 pupils.

On July 15th the school children and their friends assembled at the City Hall, to hear the results of the recent examinations, and to witness the distribution of prizes. The chair was taken at 8 p.m. by Mr. Malory, acting chairman of the Public Board of School Trustees. The Rev. W. Cyprian Pinkham, Superintendent of Education, Rev. Prof. Hart, Rev. J. Robertson, Mr. Biggs, and several members of the Trustee Board, occupied seats on the platform. The Chairman having made a brief introductory speech, Mr. Biggs, assisted by Mr. Ferguson, Principal, then presented the prizes. W. Agnew received the following special prizes:

Chambers' Misscellany in ten volumes, from Messrs Parsons & Richardson, for the best essay on "The Advantages of Education."

Mr. C. R. Tuttle's gold medal for general proficiency, and a prize from Mr. Ferguson, the Principal, for map and linear drawing.

Miss Wright, the senior teacher of the North Ward School, received from her pupils a very handsome silver card basket.

After the presentation, brief and appropriate speeches were made by the Superintendent, the Inspector, the Principal, and Revs. Professor Hart and J. Robertson, and the last named gentleman brought the meeting to a close by pronouncing the benediction.

The examination of teachers commences on 10th August. The Board of Education has recently decided to have only one examination a year, viz. : the August examination, and to hold it for the present in Winnipeg.

The following gentlemen have been appointed Inspectors for the current year :

The Rev. W. R. Ross, M.A., Rev. A. Matheson, Rev. J. Douglas, Rev. Mark Jukes, Wm. Hespeler, for Mennonite schools, and A. M. Sutherland, B.A.

The Superintendent of Education for Protestant schools inspects the schools in the immediate vicinity of Winnipeg.

W. H. Culver, B.A., has been placed on the Board of Examiners, instead of the Rev. J. F. German, M.A., who has left the Province.

Readings and Recitations.

THE SCHOOL-ROOM.

FOR FRIDAY AFTERNOONS.

THE FARMER WHO BECAME DRUM-MAJOR.

Peggy and Meggy tell the Story in their own way.

By Joel Stacy.

Note.—The success of the following recitation will depend upon the vivacity and piquancy with which the two little girls tell the story. If they narrate and supplement and confirm and contradict and agree *as if they really meant it*, they will gratify their audience.

Peggy : Our father worked upon a farm,
He wore a linen smock ;
Meggy : 'Twas gathered to a yoke on top,
And hung down like a frock.

Peggy : Oh, he was very meek,
And mother used to scold him.
Meggy : And he would always do,
Exactly what we told him,—
Peggy : *Ex-actly* what we told him.

Meggy : His shoulders had a little stoop
Which mother tried to cure ;
Peggy : She used to say his shambling walk
She scarcely could endure.

Meggy : But he played the fiddle well,
And sang on Sunday sweetly ;
Peggy : He beat the time for all,
And knew the tune completely,—
Meggy : Yes, knew the tune com-*pletely !*

Peggy : When mother called, "Come, John !" he came,
And smiling chopped the wood ;
Meggy : He drew the water, swept the path,
And helped her all he could.

Peggy : He used to romp with Meg and me,
Meggy : Yes, and with Polly Wentels,
Peggy : But oh, my sakes ! That was before
He put on regimentals !
Meggy : Yes, put on regimentals !

Peggy : For, oh, a big militia man,
One evening after tea,
Meggy : Came in and coaxed our father dear
To join his company.

Peggy : For men were very scarce
That summer in our village,
Meggy : And so they all prepared
They said for war and pillage.
Peggy : Just think ! for war and pillage !

Meggy: Well, after that he dropped the smock,
He stood up stiff and straight;
Peggy: And when we called for wood and things,
We always had to wait.

Meggy: Still he was rather meek,
And mother still could scold him;
Peggy: He nearly always did
Exactly what we told him,—
Meggy: *Ex-actly* what we told him.

Peggy: But soon he had a big mustache,
He stalked about the farm;
Meggy: He went to drill three times a week,
And couldn't see the harm.

Peggy: At last he told our mother
A thing that did enrage her.
Meggy: "*Ri-dic-u-los!*" she said,
"For you to be *drum-major!*"
Peggy: For him to be drum-major!

Meggy: He wore a splendid soldier coat,
He bore a mighty staff;
Peggy: But oh, he lost his gentle ways,
And wouldn't let us laugh.

Meggy: He grew so very fierce
He soon began to scold us,
Peggy: And then we had to do
Exactly what *he* told us!
Meggy: *Ex-actly* what he told us!

Peggy: We used to run and hide away—
Meggy: *You* did—not *I*, dear Peg!
Peggy: Why, yes, you often did it, too,
Now don't deny it, Meg!

Meggy: He scared us 'most to death,
He walked just like a lion;
Peggy: And when he coughed out loud
He set us both a-cryin'!
Meggy: Yes, set us *both* a-cryin'!

Peggy: He wouldn't play, he wouldn't work,
The weeds grew rank and tall;
Meggy: The pumpkins died; we didn't have
Thanksgiving Day at all.

Peggy: The farm is spoiled. It isn't worth,
Ma says, a tinker's wager.
Meggy: Now wasn't it a dreadful thing
For him to turn drum-major?
Both: A savage, awful, stark and stiff, ridiculous drum-major!

—*St. Nicholas for April.*

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

RUSSELL TEACHER'S ASSOCIATION.—A semi-annual meeting of the Russel Teachers' Association was held in the village of Cumberland on the 11th and 12th of June. About forty teachers were present. Rev. T. Garrett, B.A., President, in the chair. Rev. Mr. May, I.P.S., Carleton, was also present and took part in the discussions. The following papers were read and discussed: "Geometry," Chas. McCutcheon; "How to Teach Writing," Samuel McCusker; "Mental Arithmetic," Miles G. Ross; "Organization of a Mixed School," J. Belanger; "The Use of History," John McCutcheon; "Drill and Calisthenics," Rev. T. Garrett; "Elementary Grammar," F. R. Pratt. These were all excellent papers, and elicited very lively discussion. J. Houston, M.A., Head Master of the Hawkesbury High School, took part in the debates, rendering very valuable assistance to the Association. The officers elected for next year are: Rev. T. Garrett, President; Mr. J. H. Hill, Vice-President; N. G. Ross, Sec.-Treasurer; Management Committe—Messrs. J. Belanger, F. R. Pratt, Wm. McCutcheon, Wm. Bruntin, and Joachim Jouvent. An entertainment in connection with the Institute was held on Friday evening, when the Rev. J. May delivered a lecture on Education to a large audience. He deprecated the undue length of the school programme of studies, and the prevailing system of *cram*. His views seemed to meet with the hearty approval of all present. After the lecture came several recitations by Messrs. Williamson, Pratt, and others, and then the crowning event of the evening in the form of a presentation to the worthy Inspector of the county, the Rev. Mr. Garrett. The address, a highly complimentary and affectionate one, was read by Mr. F. R. Pratt, Mr. N. G. Ross presenting a beautiful gold watch and chain at the proper moment. Mr. Garrett was evidently taken by surprise, but managed to express his recognition of the loyal kindness and respect which prompted this action on the part of the teachers under his charge. Few Inspectors have done more for education than Mr. Garrett; and it is pleasing to note that his services are appreciated by those most competent to estimate them at their true value. The proceedings terminated with the National Anthem.

NILES G. ROSS, Sec.-Treas.

WATERLOO.—Central School, Berlin, Friday, Sept. 10th, 1880, at 10 o'clock a.m. *Programme.*—First Day.—1. Reading. Subject continued from beginning of Second Book, Dr. D. K. Erb; 2. Arithmetic, Subject continued from beginning of Multiplication, Mr. G. A. McIntyre; 3. How to Teach History, Mr. Thos. Pearce, I.P.S.; 4. Essay, Miss C. A. Jones; 5. Physical Culture, Mr. P. H. Green; 6. Mathematical Geography, Mr. D. Marshall; 7. Selection of Subjects for next Promotion Examination. Second Day.—1. How to Teach Grammar from the beginning, Mr. Geo. Sharman; 2. Report of Delegate to Provincial Teachers' Association; 3. How to Teach Music, Mr. J. W. Groh; 4. How to Deal with Indolent Pupils, Mr. Wm. Scott, B.A., Head Master Toronto Model School; 5. Should the Minister of Education acquire the Copyright of all Text Books, Mr. W. T. Biggs; 6. Memory, How to Train it, Mr. Wm. Scott, B A.; 7. Reception of Managing Committee's Programme for next meeting and the Report of the Library Committee. Sufficient time (to be selected by the Association) will be devoted each day to general business and the Question Drawer.

W. F. CHAPMAN, President. GEO. STEUERNAGEL, Secretary.

MAGAZINES.

THE ATLANTIC MONTHLY for August contains an instalment of "The Stillwater Tragedy," which continues to grow in interest; "Sicilian Hospitality," "Kintu," "The Surgeon at the Field Hospital," "Mr. Hunt's Teaching," "Pepacton, a Summer Voyage," "The Archbishop and Gil Blas," by Oliver Wendell Holmes, "Sylvia's Suitors—a Little Episode," "Among the Pueblos," "Edward Mills and George Benton," by Mark Twain, "Alien Sin," "The Preceptor of Moses," "An Englishwoman in the New England Hill Country," "The Reed Immortal," "Taurus Centaurus," "The Republicans and their Candidate," "The Contributors' Club," and a number of brief and readable book reviews. One hundred and forty-four pages of excellent reading.

CORPORAL PUNISHMENT.—A very large majority of the pupils of the public schools can be governed by moral suasion. The parents know it; teachers fully recognize it, and would scarcely consent to teach if it were not so. As a rule, also, the best teachers have the fewest cases of corporal punishment, often managing their school for weeks without an instance of it. Yet these same best teachers attribute their success in part to the fact that they have always had the power to maintain their authority by physical means, if intellectual and moral arguments failed. Undoubtedly, the easiest thing for a teacher to do with an unruly pupil is to suspend him. Then, for a month, if no longer, he is rid of all trouble from him. This effectually sets him back into the next grade, because he gets behind all his classes, and probably so thoroughly discourages him that he stays out of school altogether. Of course the school is purified. After a time none but those who scarcely need a teacher to instruct them in good behavior remain, and all is lovely. "The well need not a physician." The physician in this case being paid a salary, is not concerned about the loss of his patient.—*Inter-Ocean, Chicago.*

—"You may succeed in life without learning anything about the subject," said a teacher to a careless pupil, "but you can never accomplish anything useful without a habit of diligence." What branches the pupil is studying is of less importanae than the manner in which he pursues them. It is well to have the instruction in our schools as "practical," as closely connected with the activities of life as possible, but any course of study, faithfully followed, will tend to form two habits more important in a citizen, obedience to law, and diligence in business. Of him who wanders aimlessly among elective studies it may truly be said, "Unstable as water, thou shalt not excel."

The work on blackboards should be erased as little as possible while the school is in session. The breathing of the chalk dust, filling the room from the boards, is said to be a most active excitant of bronchial and pulmonary affections.

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—o—

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I have carefully examined the Drill and Calisthenic Book by Mr. J. L Hughes and consider it a *valuable addition* to our category of school books The use of it by our teachers will develop and encourage a military taste in our schools I have found from the institution of a moderate amount of drill in our schools that it brightens up the pupils and teaches them habits of order, regularity, silence, obedience, attention, neatness, steadiness and method. By drill we can most effectively impart all the benefits that result from discipline.—W. E. SPRAGUE, Principal Model and Public Schools, Cobourg, Ont

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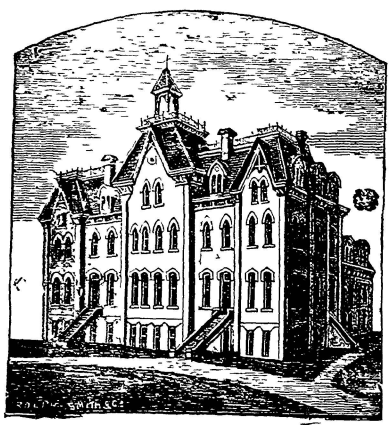

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THE MEDICAL ASSOCIATION ON CRAMMING.

The Dominion Medical Association had quite a lively discussion on the impropriety of forcing the brains of young children to perform too much and too exhaustive work. The address of Dr. Grant, who opened the discussion, will be found in another column of the JOURNAL. It is well that the medical profession should speak freely and clearly on the matter. It is to be regretted, however, that its members should assume that the teaching profession are in opposition to them in their good work. This is not the case. The teachers were the first to propose a remedy for the evil of giving children abstract work, and long hours before the age of seven years. The teachers in all parts of the world long ago reached the grumbling stage in which the doctors in Europe and America now find themselves, and thoughtful men and women have for years been planning and carrying into execution numerous methods for accomplishing what Dr. Grant so properly demands; viz., "that up till the age of seven the school work of the child should assume the form of play." The statement of Dr. Grant that "new subjects are added to the programme of studies year by year," is not correct. The work has been reduced during the past 3 years.

Dr. Grant was on solid ground when he attributed the evil effects of school life to badly lighted and ventilated school houses. The whole system, physical and mental, is debilitated more by these causes than by the "cramming," which exists very often in the imagination of ardent writers and speakers. There are pupils who cram, but for every one who crams because of pressure brought by the teacher, there are ten who cram on account of the ambition of their parents or themselves, or as the result of badly balanced mental and physical constitutions. Let the Kindergarten precede and leaven the primary public school, let the school house be well lighted and ventilated, and let the pupils have plenty of physical exercise in the playground and in the school-room, and the evils of cramming will disappear. There is not much danger of over-working the brain of either a boy or girl who is physically capable of enjoying fun. It is a matter of profound thankfulness that a strong healthy boy or girl is capable of resisting both school and parental inducements to over-work.

In connection with Dr. Grant's excellent article, it would be well to read the extracts given in the present number from Dr. Richardson's very able work, "Learning and Health," and in past numbers from eminent German and English writers.

EDUCATIONAL ACTIVITY IN THE MARITIME PROVINCES

The meetings during the month of July of the Provincial Educational Association of Nova Scotia, and of the Educational Institute of the Province of New Brunswick, the former at Truro, the latter at Fredericton, seem to have been occasions of great interest. These bodies are established on substantially the same principles, both having organic connection with the Central Council of Instruction or Board of Education. The New Brunswick Institute has existed for several years as the apex of a system of County Institutes, and under the skilful management of Dr. Rand, has done much, towards both the development and the consolidation of the educational interests of that Province. Revised arrangements for the inspection and classification of schools, recently brought into force throughout the Province, excited some discussion at the meeting just held. In New Brunswick and Nova Scotia, the contributions of the Provincial Treasury, for the support of public education, are paid directly to the teachers according to class, and not, as in Ontario, to the municipalities or counties for distribution. One effect of the new regulations, as we understand them, is to make the teachers' grants in part dependent on the award of the Inspector, who classifies the schools of his district on the basis of a prescribed "Course of Instruction," and in accordance with conditions established and defined by the Board of Education. The chief point taken against this system appears to have been, that under its practical working, teachers, altogether independently of their industry and skill, may possibly gain or lose in both pocket and reputation by adventitious circumstances. We have not that knowledge of the schools of New Brunswick which would justify us in pronouncing an opinion as to the value of this criticism. We are free to say, however, that the fact of the recently introduced system receiving the energetic advocacy of so practical and experienced an educationist as Dr. Rand, gives us an *a priori* impression in its favor.

The Association convened at Truro, takes the place, we believe, of a voluntary organization, constituted on somewhat elastic principles. Dr. Allison was able to draw together, not

only a large number of teachers and of his own officials, but several distinguished men working in the higher fields of education. That a Province with so creditable an educational record as Nova Scotia, should yet be without a definitely prescribed course of public instruction is somewhat surprising. We are glad to observe that steps of a practical kind are being taken to supply this defect. The professional exercises, both at Truro and Fredericton, were evidently of a very high order.

—We have received from some of the Head-Masters of High Schools in the Province returns of the candidates from their several schools who passed at the recent Intermediate examination. A glance will show that this return is by no means complete, for many of the Masters have not as yet sent us the needful information. The return is also imperfect, for it does not indicate in every instance, as it should do, whether the pupils from each High School were prepared in it, or whether the number included all who attended the examination from the county in which the High School is situated. Also it may have happened that in some cases pupils educated and prepared at a certain High School, but belonging to the adjacent county, may be included in the numbers of the High School of the latter instead of the former. There are many other considerations, such as appeals, &c., which may be taken into account, and thus the record we have given so far is not to be accepted as the correct result. It is well, however, to have it even as it is—an approximation—as it will give a general idea of how matters stand in each school. It is obvious that comparisons cannot be drawn of the merits of particular schools, for in very few instances have the total number of candidates sent up been returned to us; and this is well, because it was not for the purpose of affording an opportunity to the public to make these comparisons that we desired the information, for an injustice would be done to many good, hard-working schools by such a course; but simply as a matter of intelligence which would be of general interest to our readers. We regret that want of space prevents our giving the names of the successful candidates.

—It is sometimes astounding to note how unfairly teachers are dealt with by the "outside world," and how often those who are most loud in denouncing them for not taking a certain course are the most severe in condemning them if they adopt it. *The Schoolmaster* gives an instance in point:

The members of the Petty Sessions at Teignmouth, in giving judgment in a recent case, declared through the mouth of their chairman that "children of all ages, boys as well as girls, were very troublesome, and that they constantly required a flogging; in fact, more flogging than they ever got." Although the bench of magistrates were thus convinced that corporal punishment was a necessity and a thing more honoured in the breach than in the observance, they fined a schoolmistress half-a-crown and costs for doing the very thing which they declare to be so necessary. A pupil had been "stubborn and refused either to say her lesson or to speak," and the mistress had used the magisterial remedy. Evidence was given that the mistress had been a teacher for sixteen years, that no complaint had ever been made against her, and that her treatment of children was marked by uniform kindness. Nevertheless, because she endeavored to subdue the stubbornness of the pupil and adopted the plan which the magistrates themselves declared to be indispensable, she was subjected to the humiliation of a fine. In the case of a cross-summons against the mother, it was shown that the house of the mistress had been besieged by a host of angry matrons and excited youngsters. The mother had violently abused her and ineffectually endeavored to scratch her face. Other women had incited the mother to violence against the teacher, with the advice to "go at her." The children who were in the crowd tore up the trees of the schoolmistress and were otherwise troublesome. The magistrate thought that such an onslaught as this, where tongues were wagged and fingers itched for scratching, was "perhaps natural in a mother" and was very trifling since it was "committed in a fit of exasperation." They fixed the penalty at sixpence, so that the public may easily calculate the proportion which exists between an angry onslaught and the discharge of a disagreeable duty. This is another proof that something should be done to secure a definite idea concerning the teachers' legal rights in regard to the infliction of corporal punishment.

—The death of one of the most prominent citizens of Toronto, and two of his children, by drowning, recently shocked the Canadian public. The horrors of the sad event were intensified by the fact that the drowning took place within a very short distance of the shore on which sat the wife and mother of the lost ones. Are there no lessons for teachers and school managers in connection with this awful accident? We do not believe it to be the function of schools to teach swimming; we hold that in every city and town which has sufficient water facilities the municipal council ought to provide safe swimming baths, and a caretaker who would teach swimming as well. The schools have a duty to perform, however, viz.: to teach the best method of resuscitation. The body of one of the children of Mr. Wilkes, a girl fifteen years of age, was warm when taken from the water, in which she had been only a few minutes. There seems to be no reason for doubting that she, at least, if not her father and brother, should have been restored to life if proper means had been used. In connection with lessons on hygiene, or as special lessons, the restorative process should be explained and illustrated. Each step might be shown by actually handling a pupil in the proper manner, and explaining the object aimed at and pointing out the way in which the required action of the organs is brought about. Medical men are usually so far from the scene of drowning accidents that the chances of resuscitation are past before they arrive.

—Maurice Hutton, Master of Arts, recently appointed Professor of Classical Literature in University College, is a Master of Arts of the University of Oxford, and is also a Fellow of Merton College. He was successful in obtaining first-class honors in Greek and Latin at the University Examination by Moderators, and also first-class honours in Liberis Humanioribus at the examination for the degree of B.A. by the Public Examiners. He was appointed to the Professorship of Classics at Firth College, at Sheffield, last year, the college being newly founded by the liberality of a gentleman of that name, and being similar to Owens College at Manchester, and forms one of the Colleges connected with the new Victoria University. Mr. Hutton was selected as such Professor by the governing body of Firth College in preference to 28 other competitors.

—In the Foster National competition in writing in the schools of Great Britain and Ireland, the highest four prizes were awarded to Irish girls. The first prize has been won by a girl every time for ten years, with one exception.

Contributions and Correspondence.

OVER-PRESSURE IN EDUCATION.

BY DR. HODGINS, DEPUTY MINISTER OF EDUCATION, ONTARIO.

The re-opening of the schools after the summer vacation is an opportune time to consider the causes of the alleged over-pressure on pupils, and to suggest some way in which it can be beneficially relaxed.

It cannot be denied but that the utterances of eminent physicians on this subject are justly founded on the practice of carrying out too rigidly a prescribed programme, regardless of the physical condition or health of the pupils, or of hygienic causes which, to a professional eye, would sufficiently account for the general listlessness and apathy of the school children. When these things are unobserved by the unpractised, or are overlooked by the trustees and teacher who know something of the matter, the results are, as might be expected, in both cases, highly pernicious.

It cannot, however, be doubted but that much of the ill effects of over-pressure on pupils is due to want of information as to the natural laws which unerringly govern in such cases. It is nevertheless true that even when these laws are understood by the teacher, he is not always, but he is often powerless to give them effect. The ill-ventilated school houses in some localities, and the over-crowded school rooms, with the consequent imperfect classification of the pupils, render it, in a large number of cases, utterly impossible for teachers to give more than a theoretical assent to the principles laid down for their guidance by medical men. They entirely despair in such cases of the opportunity to give them practical effect, and hence the perpetual outcry against teachers for not doing what, either the thoughtlessness of the school authorities, on the one hand, or their parsimony or ignorance, or both combined, on the other, render it impossible for them to do. It is, however, greatly in the power of judicious teachers to mitigate the evils complained of.

The defects and carelessness in school management to which medical men have called attention, may be classified under the three heads of long lessons, long school hours, and an indiscriminate and thoughtless pressure on all pupils alike. Others add to these a pernicious system of discipline, and a no less injudicious system of rewards and punishment. As this latter is, however, a subject which involves the consideration of the personal and moral qualification of a teacher for his high office, we shall not now enter upon it.

With a view to furnish specific information on the subject, as well as a few practical hints to teachers on this important question of over-due pressure on pupils, I prefer to quote the opinions of eminent medical men, rather than to indulge in any reflections of my own. Not only have leading physicians in our own country called frequent attention to the grave questions of over-pressure, but several distinguished writers in England and the United States have uttered words of warning which should not be disregarded by teachers. Of these latter, one of the most noted and practical is Dr. Richardson, of London. In an able lecture on "Learning and Health," he deals with the general question under the heads of *Education in Childhood* and *Education in Boyhood and Girlhood.* I propose under each of these heads to give a few extracts containing some hints of practical application to the subject in hand. Dr. Richardson under the first heading says:

"The first serious and increasing evil bearing on education and its "relation to health lies in too early subjection of pupils to study. . .

"For children under seven years of age, the whole of the teaching that "should be naturally conveyed should be through play, if the body is to "be trained up healthily as the bearer of the mind. . . .

"It is in this period that education is too often made for the first time "to stand at variance with health. It is in this period that the enforced "lesson so often harasses, wearies, and at last darkens the mind. It is "in this period that the primary fault is committed of making play a "set-off against work, and a promise of a good game an inducement for "the persistence in hard labour.

"What is constantly attempted to be taught in this period of life is "the saddest detail. I have known a regular imposition of work per day, "*equal to the full complement of natural work for many a man or woman.*

"There are schools in which children of eight, nine, and ten years of "age,—and, it may be, younger children still,—are made to study from "nine o'clock till noon, and again, after a hasty meal and an hour for "play, from two to five in the afternoon, and later on are obliged to go "to lessons once more, preparatory for the following day. . . .

"If you inquire as to the sleep these children get, you will hear that it "is disturbed, restless, and often broken. In a healthy child the sleep "comes on irresistibly at an early hour, and when the eyes are shut and "the body composed, and sleep is carried out till waking time without "a movement of position of the body. You ask the healthy child about "his sleep, and he says that he is simply conscious of having closed his "eyes and opened them again. But these unhealthy, overtaught children "have no such elysium. They sleep perchance to dream; passing through "strange abodes and narrow crevices which it seems impossible to squeeze "into, and waking with a start, in what is commonly called a nightmare. "The bad sleep naturally leads to a certain over-wakeful languor the next "day; but strangely enough, it interferes with the natural advent of sleep "the next night, so that sleeplessness at night becomes a habit. The "child must be read to sleep, or told stories until it is off; and thus it "falls into slumber fed with the food of dreams, worries, cares, and "wonders. . . .

"For fourteen years of my life I was physician to one of the hospitals "in this metropolis, in which so many of those who are afflicted with "consumption find their way. Twice, and occasionally three times a "week, the duty of inquiry into the origin of this disease came to my "share of professional work. The field of operation was extensive, and "no fact was yielded in it so definitely as this fact, that the larger pro-"portion of the consumptive population has been brought up in close "school-rooms, where the hours were far too prolonged, and then in "close rooms at home, where other work, in confined space, filled up the "remaining life time. For such a state of things there are no insur-"mountable difficulties to improvement. An intelligent public demand "for improvement would very soon lead to an extension of what are "called garden-schools for the young, in which teaching by amusing les-"sons or games of learning, in a pure air, and ample space, would secure "all the advantages which are now so much desired. In our large and "splendid town and city schools, which are becoming distinct and beau-"tiful social features of the age, something of this system is approached, "if not attained."

A practical solution of the difficulty of dealing satisfactorily with the question of "Home Lessons" was adopted some time since in Cambridge, Massachusetts. It was there arranged that the whole of the forenoon should be devoted to school recitation, and the afternoon to the explanation of the next day's lesson, with directions as to "how to study" it. The result was, we believe, highly satisfactory. At all events, it greatly lightened the dreary labor of poring over the next day's lessons during hours when the pupil should have been enjoying reasonable recreation and the pleasures of home.

Under the second heading of *Education in Boyhood and Girlhood*, Dr. Richardson speaks with gravity and directness. He says:

"The period of life (from eleven to sixteen or seventeen years of age) "is in many respects extremely critical. The rapid growth of the organs "of the body; the still imperfect and imperfected condition of the most "vital organs; the quick changing and yet steadily developing form of "mind; and not to name other peculiarities, the intensity of feeling in "the way of likes and hates—all these conditions, physical and mental, "make this stage of a human career singular, both to disorders of a func-"tional or even of an organic kind.

"The lines of error carried out in this period are in three directions at "least, all tending to impair the healthy and natural growth. The first "of these errors is *over-work*, which is often useless over-work. The "second is deficient skill or care in detecting the natural *character of ability;* "in other words, the *turn of mind*, and, it may be said, *capability* of the

" learner. The third is the system of forcing the mind into needless *com-*
" *petitions*, by which passions, which are not intellectual, but animal,
" feed the intellectual fool with desire, and, by creating an over-develop-
" ment of the nervous-physical seats of passion, make or breed a soul of
" passions which may never be quenched in after life, until it itself puts
" an end to life abruptly by the dreariness it inflicts.

" I have sketched from a trustworthy record, the work of learning im-
" posed on a pale and nervous boy at a school, the discipline of which is
" by some felt to be rather light than heavy. . . . . For the exercises
" of the mind imposed eight hours of work are necessary, and if this period
" of labor were enforced, with two hours for meals and oblations and four
" hours for play, it would require all the remaining ten hours out of
" twenty-four for sleep, in order to supply that renovation of body and
" extra nutrition which growth to the developing organs so vigorously de-
" mands. This tax is extreme while growth is in progress. But it seems
" never to be conceived that growth is labour. To put a young horse in
" harness and to make it work hard while it is growing, is considered the
" most ignorant of processes, while to work a growing child . . . . .
" is often considered the most correct and excellent of processes." . . .

The writer then proceeds to discuss the ill effects of this system of training; and ridicules the application to such cases as he cites the ancient proverb, that "whom the gods love die young." He shows that they are systematically killed by the fatal process of indiscriminate forcing at school. He then points out the common error of "failing to allow for differences of mental capacity and turn of mind in different learners." He speaks of the "many minds of neutral tendency; minds that can take in a certain limited amount of knowledge on almost any and every subject, but which can never master much in anything." He then goes on to say :—

" There are two other very different orders of minds. There is the
" mind analytical—that looks into details in business, into elements in
" science, into figures and facts in civil and natural history. . . There
" is again the mind constructive, or synthethic; the mind which uses
" facts and figures only in the end, for its own purpose of work; which
" easily learns principles of construction, ... and which cannot,
" by any pressure inflicted on it, take hold of minute distinctions. . . .

" In the small school of the youth, as in the great school of the world,
" these representative orders of mind are ever present. The mistake is
" that they are so commonly confounded that no change is made in the
" mode of study to suit the genius of the one or the other. The conse-
" quence is that lessons are given to the analytical student which he can-
" not possibly grasp, and to the synthetical student which he cannot
" possibly master. Under these conditions both chafe and worry, and do
" not get on. Then they grow fretful and feverish, are punished or slight-
" ed. . . . And so, if they are unduly forced, they grow up unhealthy
" in body and in mind. . . .

" These bad physical results the physician alone sees, as a rule, . . .
" nor does he, nor do others, see the remaining evils from the physical
" side. . . . As William Howitt says: "There is no mistake so fatal
" to the proper development of man or woman as to pile on the immature
" frame, and on the yet unfinished fabric of the human body, a weight of
" premature and, therefore, unnatural study. In most of these cases,
" where nature has intended to produce a first-class intellect, she has
" guarded her embryo genius by a stubborn slowness of development.
" Moderate study and plenty of play and exercise in early youth are the
" true requisites for a noble growth of intellectual powers in man and for
" its continuation in old age."

These extracts may serve to put teachers in possession of the matured opinions of eminent medical men on the evils of the undue pressure of studies on the youth under their care. A knowledge of the facts and opinions cited will be of great value to those teachers who sympathize with the popular objections to this undue pressure, and who are anxious to mitigate its evils as far as possible. It will no doubt aid them in dealing with the individual classes of pupils whose mental peculiarities are so fully described in the foregoing extracts.

GYMNASTICS OF THE BRAIN.

BY DR. GRANT, M.P.

Read before the Dominion Medical Association, Ottawa.

In presenting this subject for the consideration of the Association, I feel satisfied that no more important topic could occupy the attention of medical science than that which closely concerns the welfare of society, and promotes in the most comprehensive sense, the "*mens sana in corpore sano.*" Mental hygiene and physical hygiene are inseparably connected, and a few observations at present may not be out of place in regard to the essential balance of mind and body, and the application of a few ordinary principles to the present system of education. The physical well-being of the pupils in our schools should be as carefully guarded as the acquirement of knowledge. Year after year our educational system is becoming more complicated, and even the so-called Public School course is quite academic in character and more than an ordinary test of strength to the young brains, in their plastic state, budding forth to the supposed stage of practical usefulness. While acknowledging the rapid increase in the required subjects of study, branch after branch being yearly added, we must not overlook the very tree of life and the processes requiring such close attention to obviate the inroads of disease which soon saps vitality and ruins the prospects of the brightest specimens of intellect in the incipient stage of development. The mental and physical well-being of the pupils should advance equally, otherwise growth in either case will become, in a measure, one-sided. While approaching this subject I am fully aware that it is dangerous ground; still, as a matter of public duty, it may not be out of place to advert briefly to a few points respecting which it is important all classes of the community should alike have full information. The point to which I first wish to direct attention is "the brain of youth." The problem, and one of the most difficult and trying of the age in which we live, is, how to build the best brains out of the materials placed at our disposal. Education or educated evolution certainly has considerable to do with the development of mental power. The building of a brain is a social problem of more than ordinary interest to every family circle. Mothers particularly have to do with it, and teachers are desirous of drawing out innate power in its various forms, just as varied and peculiar as the phases of the human countenance. The brain, the chief part of the nervous system, must be built up in keeping with the development of the whole body, the one depending greatly on the other, in order to arrive at the greatest degree of power and perfection, either as to organization of structure or performance of function. Dr. Maudsley, in his Gulstonian lectures of 1879, says :—"The time has come when the immediate business which lies before anyone who would advance our knowledge of mind unquestionably is a clear and searching scrutiny of the bodily conditions, of its manifestations in health and disease; he must recognize how entirely the integrity of the mental functions depends on the bodily organization—in fact, must acknowledge the unity of mind and body." The brain, the seat of the mind, possesses a mechanism peculiar in itself, and a power diversified in character, presenting various phases and peculiarities, throughout the highest order of intellectual development in the *genus homo*. In the crude and almost rudimentary state of the cerebral pulp—soft, pliant, and undecided in cerebral type, as to inherent mental power or capacity—more than ordinary care must be observed in suddenly straining the structure nature has put in the cranial cavity. The drawing out process embraced in the true education must be conducted with care, caution, and more than ordinary guidance and observation. It is here that mental hygiene operates, embracing as it does all that relates to development, exercise and the maintenance of mental activity—in fact, education in the most comprehensive sense. The brain may be considered a central telegraphic office, constantly distributing messages to every part of the system; and in order to attain success in the working of the complicated nervous machinery, it is absolutely necessary to know something of the physiological principles involved in the promotion of a single thought or idea. It is a well-known fact that the growth, training

and employment of the young, aid in the building up of a brain. On this basis Dr. Brown-Sequard proposed the systematic training of the left hand in children, in order to develop the right side power of the brain equal to the left. In fact it is necessary, for the building of a powerful brain, that all the bodily organs should take their part. Brain labor or exercise in the work of the school, now termed cerebration, is the problem which to-day is occupying the attention of close observers in the path of intellectual development. Taking into consideration the pliant character of young brain tissue in the very midst of the formative process of thought and ideality, the degree of exercise to the point of mental strain must be guarded most carefully and patiently. As the normal performance of a function strengthens and develops the organ itself, so the brain becomes similarly influenced. Here student life comes in, with its advantages and disadvantages, and in order to attain the highest degree of intellectual development, reason, rather than cramming, is likely to bring about the desired object. While brain tissue is in the elementary stage, let elementary education be the pabulum of thought. As Huxley has remarked, "freshness and vigor of youth must be maintained in mind as well as body." The more closely we examine the subject of mental hygiene, the more closely it partakes of the common-sense principles how best to educate and train to achieve the greatest degree of culture, embracing all the interests of man in his varied relations of life. To accomplish these desired results, an important question arises: At what age should children be admitted to school? In the consideration of this point the peculiarities of brain structure require at least a passing notice. Fat, phosphorus and water are important factors in the elimination of brain power. In the infant the chief mass of the brain is soft and uniform, with smooth ventricles and few convolutions. In the adult we find much better defined brain substance, with elaborate ventricles and more numerous convolutions, less regular in character. In the infant the peripheric nerves are larger in proportion than the nervous centres, excepting the sympathetic ganglia. The head of the new-born infant is one-fourth the length of the body and one-fifth the weight, and all the parts of the body have their most rapid growth within the first three years of life. Between the fifth and sixth years the base of the brain grows rapidly. The interior of the brain at this age also gives evidence of rapid growth. The receptive faculties here obtain power, and at this stage the foundation of education should be commenced slowly, gradually and cautiously, great care being bestowed to become acquainted with innate peculiarities of the childish brain, while being stamped with the first thoughtful impressions. From all the information on this subject, the seventh year is considered the period for the commencement of regular mental work, not however to strain the brain, but rather to bring about regular and gradual training of this intricate structure, having so many functions and taking so very important a part in the growth of the body. The brain is said to digest more than even the stomach in a sense, and certainly it governs largely the digestive process, and on that account how careful the teacher must be in observing the growth and vigor of youth, so necessary in the formative process of thought, the bases of the common sense principles of education. It is a well-known fact that children sent to school too young are more liable to the various diseases of childhood. Irregular temperature, defective muscular exercise, and tight lacing are powerful factors in the development of disease. Improper position, inclining to one side or the other while studying at the ordinary desk, frequently results in spinal deformity. How often it is the case that children when failing in health, when subjected to a skilled examination, are found to have a high shoulder and a curved spine, all of which have been permitted to pass unnoticed until advanced and seated as structural disease. During school life, the points for close examination are numerous, and too great care cannot be taken in guiding the tiny structures of those frames, which afford such comfort in the home circle, and in time take their part in the intellectual development of national power and future greatness. To correct such difficulties and strengthen such sets of muscles as give evidence of failing power, McLaren, of Oxford, has established a gymnasium, upon the entry to which a close and careful examination is made and a systematic method of training is adopted, sufficient to meet the growing requirements of the system. Glasgow University has also its gymnasium, and, although not compulsory, its necessity is daily attracting closer inquiry. McGill College is also adopting the same principle. The gymnastics of brain or body should not conflict with each other, and in the growth and development of power the results to be achieved will certainly be greater than by cramming, under a system of hot-house vegetation, through which both physical and intellectual vigor become warped, and practical usefulness for the varied spheres of life considerably lessened. Hospital statistics point out that the principal mortality in children has passed between the seventh and eighth year, which strengthens the argument very considerably as to the best time to enter school. Parents should not be anxious to convert schools into nurseries, and this point, I feel assured, has not escaped the attention of those whose immediate supervision the whole subject of school life is placed in our Dominion. To the ordinary observer, it must be apparent that the period between childhood and boyhood is one surrounded by constant anxiety and requiring more than ordinary care and watchfulness. For children under seven years of age the great proportion of the teaching should be conducted or conveyed as play; not as a play upon words, but a play, in the development process of germinal intellectual power. It is in these three years of childhood that education should not in any way conflict with health. Short hours of study, vigorous digestion, kept up by ample physical exercise, will assuredly bring about better results than the over-stimulation of young people by competitive examinations, inducing a degree of mental high pressure, which may make bright pupils in childhood; first in every class; laden with prizes, but oftentimes sapped as to the requisite physical power for the varied callings of after-life. Those who require to live by muscular power chiefly must develop the power early. In the cultivation of brain power direction should, as soon as possible, be given to the practical usefulness of the future. Thus preserved, child power, in time, becomes good man power, and in the march of intellectual progress affords strength and endurance to the future of our Dominion. In an address before the State Medical Society of New York, Dr. Agnew draws attention to the increasing prevalence of asthenopic, refractive, and neurotic difficulties among scholars at the present day. These diseases, he considers, are growing rapidly in schools, colleges, and other centres of civilization. In both England and Germany we have ample evidence of the same. The question arises, how are such diseases to be most judiciously guarded against? By careful scientific inspection, and the rigid enforcement of personal and local sanitation. Defective school architecture has much to do with bringing about defects of vision through unequal expansion and contraction of the pupils. Hence the importance of the proper adjustment of light in the school-room. To correct such difficulties, we are fortunate in having a city medical inspector, and the importance of such inspection cannot be over-estimated in carrying out efficiently the best working of our educational institutions. Dr. Cohn, of Breslau, examined the eyes of 10,000 children, and found that, in various degrees, there was a rapidly increasing near-sightedness, and in some of the higher classes the near-sighted students were nearly sixty per cent. of the scholars. From these facts it is quite

evident medical men have an important duty to perform outside of the privilege of curing disease, if possible, once it has been developed. Thus we observe the absolute necessity of proper sanitary inspection, to stay the evils now on the increase, chiefly through an over-taxation of nerve tissue and nerve power, not in keeping with the physiological principles inculcated at the present day. From various sources it is quite evident that, within a few years, lung diseases are on the increase in school children, and, in many instances, may be attributed to over-crowding and long and exhausting confinement in a vitiated atmosphere. The lofty ceilings of our new school houses are evidence of progress, but proper ventilation must be carried to such ceilings, otherwise they will become receptacles of foul air, to vitiate the entire atmosphere of the room. Fresh air is about the most important food of the system, and nowhere more than during school life should there be a proper and well-regulated supply. It is a well-known fact that every individual poisons fifteen cubic feet of air every hour, in consequence of which thirty cubic feet should be supplied every hour. If we desire to stay the progress of epidemic diseases, there should be every effort made to limit the number of pupils to the area of class-room accommodation. Well might Dr. Thomas Rochester remark at the Medical Society meeting at New York in June, 1876, that "Education was not in all instances the blessing which it seemed unmistakably to be, for it became necessary to acquire it at too great a risk;" and, under such circumstances, he recommended that every school district should have a well-paid medical director, who should devote himself thoroughly and conscientiously to the many hygienic duties of the position. It is impossible to estimate the importance of this subject, which at present is engaging the attention of public men in every country. Dr. Bowitch, in his address at the International Medical Congress, Philadelphia, 1876, stated that over 200,000 persons are annually slaughtered in the United States by preventable diseases. What the death rate in the school children of the Dominion may be, or in those of the Province of Ontario, now numbering 496,000, between the ages of five and sixteen years, I could not offer an estimate. From personal observation, I fear that the cramming system of the present day is not likely to produce a generation equal to the one now passing away. The most useless individuals in society are those who know everything and can do nothing. Our country is rapidly developing, and we require workers; workers not converted into drones, by excessive ill-directed application in the buoyant period of youth. Let our education be directed towards the object in view, surrounded by the principles of common sense, and the outcome will be more lasting, the results more practical, and the rising generation one quite able to grapple with the varied emergencies of certainly a trying age.

DEPARTMENTAL EXAMINATIONS.

SUBSTANCE OF AN ADDRESS BEFORE THE HIGH SCHOOL SECTION, TEACHERS' PROVINCIAL ASSOCIATION, BY D. C. M'HENRY, M.A., COLL. INST., COBOURG.

The necessity for some such examinations as those now conducted by the Education Department cannot be doubted. On this point there is no great difference of opinion. Their peculiar departmental character arises from the direct oversight which the State, in this, as in every enlightened country, is giving to the cause of education; and, more particularly, from the financial aid which our several municipalities receive from the general treasury, to supplement local contributions for educational purposes.

Good schools presuppose good teachers, and good teachers must receive suitable remuneration. To determine their qualifications, there must be certain standards, to which they shall be required to attain. And to pay them suitably, legislative aid is found necessary. Hence our examinations, and their departmental character.

Of course, the utility of these examinations depends on their *adaptation* to the end in view—to their *thoroughness* and *fairness*. Examinations for teachers ought to be of such a nature as to necessitate careful preparation both of the *matter* to be afterwards taught, and practice in the *best methods* of instruction.

Our examinations, professional and non-professional, are supposed to meet the general requirement of furnishing the country with a supply of properly qualified teachers.

I believe that these tests are much superior to those of former years, and that no serious objections can be urged against them.

We are not assembled, however, to sit in mute admiration of any part of our educational system, simply because it is an improvement on the past. Had that course been hitherto pursued, we might still be trudging along in the old paths, the slaves of methods long since laid aside.

With a view, therefore, to elicit opinion, and, if necessary, to secure improvement in certain particulars, I shall venture to suggest a few modifications which I think might be advantageously adopted.

And, first of all, it seems to me that while the Education Department should take a very prominent part in all matters pertaining to our schools, the present tendency is rather to ignore local interest and supersede local control by centralizing all real power in a non-representative and semi-responsible body.

It has long been deemed a fundamental principle in our educational polity that an interest can best be created and sustained by extending to the people a fair share of authority. For reasons not fully apparent, a centralizing policy seems now to prevail, the most objectionable feature of which is, as before remarked, that privilege and power withdrawn from the people are being entrusted to a select committee on which the people have no direct representation.

Probably many of the changes introduced from time to time would meet with less opposition if those most directly interested were represented on this Executive Council. All this may be said without in any way reflecting on the gentlemen selected as members of this committee. It is the *principle* adopted—superseding the former representative system—to which exception is taken.

From some cause or other, our present methods are considered unnecessarily expensive. If the accumulation, in Toronto, of work formerly done throughout the province sufficiently accounts for the present outlay, it is quite susceptible of demonstration; and the necessary information should be given. The *results* now obtained by our educational machinery are by very many considered incommensurate with the cost to the country.

If our High School grants, for example, are not increased in proportion to the increase of work assigned them; if, as some trustees assert, "the *mill* in Toronto is keeping the *grist* and giving them the *toll*;"* if, in short, there is any misappropriation of school funds, it ought to be rectified in a manner satisfactory to any reasonable demands of dissatisfied trustees and teachers.

To speak of examinations more in detail, I believe the ENTRANCE EXAMINATION would be more effectual, (i) if adjacent Public Schools were encouraged to use it more generally as a test for promotion from the fourth form; (ii) if definite instructions were given Head Masters as to their presiding, and the remuneration to be received. Any perquisites available should be secured to those who have to do the work. The Inspector, in other words, should not be burdened with the distribution of this patronage. (iii) The

* It is a pity that Mr. M'Henry should have quoted such nonsense. The method of conducting examinations introduced by Mr. Crooks largely reduced the cost of the Provincial examinations.—ED.

time of holding the examination should be more definitely fixed. (iv) I think the end sought might be attained, with a saving of labor and expense, if, in making our returns, the total on each *subject* were given (as in case of Third Class Teachers), without the tedious process of entering the value given to each *answer*.

THIRD CLASS EXAMINATION.—The adoption of the Intermediate for the County Board Examination is likely to meet with very general approval, if a committee of examiners can be secured large enough to carefully examine the papers in time to prevent confusion at the opening of schools after vacation. The certificate will, doubtless, have a provincial value, and therefore every county can be supplied with teachers. It will remove from thousands of mere boys and girls, too young to teach, the temptation of trying to pass the third-class examination; and it will tend to reduce the thousands of surplus teachers in our country. Again, public school teachers will be less likely to neglect their ordinary work for the special preparation of teachers, most of whom will hereafter find it to their advantage to attend High Schools.

A very careful check will be needed, however, at Model Schools, on the admission of pupil teachers who are under age; since there is no restriction in case of Intermediate candidates.

In the character of third-class papers I know of nothing which calls for special notice. As a whole, I think they could not be materially improved.

THE INTERMEDIATE EXAMINATION has its friends and its opponents, simply because, while it has many advantages, it is not without its disadvantages. The change from semi-annual to annual has removed some serious objections; and the favorable recognition it is receiving from some of our Universities, the Medical Council, and the School of Practical Science, will greatly add to its practical value. There are still some examining bodies whose concurrence we must try to secure, especially the Law Society and Toronto University. If the promoters and friends of the Intermediate can aid us in these directions, they will take the surest way of rendering it still more acceptable.

Any examination adopted by the Department merely, or even primarily, to determine the apportionment of legislative aid, is likely to be regarded as an unwelcome burden imposed on our schools, and one which does not furnish such motives as are needed in order to secure the hearty co-operation of our pupils. Such was the Intermediate at first, and hence the suspicion with which it was regarded by both teachers and pupils.

In reference to the instructive and educating influences of this examination, while I think they are somewhat overrated, I believe a more definite direction is given to our work than under the former arrangement.

The evils peculiar to any such general change appeared on its introduction. Some of these evils may be fairly regarded as inevitable; others certainly arose from overburdening teachers and pupils.

The pecuniary advantages at first promised, absorbed the attention of trustees and teachers to such an extent as to induce an unhealthy and, in some cases, undignified competition, the evil effects of which are still to be seen. The grant per pupil has become so small that less importance is now attached to the examination than at first. It is generally admitted, indeed, that to be guided merely by the *results* of the Intermediate may prove *disappointing to trustees* and *unjustly humiliating to faithful teachers.*

The arrangement of subjects and options appears to give general satisfaction. A change will be necessary, however, in case of students who are aiming at the Medical Council Matriculation; since, in addition to the compulsory subjects, they are required to take the science group, Latin, and either French or German. As the time-table is now arranged, only one of these groups is accessible.

Some fault has been found with the method adopted, apparently with design, for lessening the chances of candidates at this examination. If the increase of candidates to between three and four thousand be deemed too great, there are several ways of reducing the number, to which no objection can be urged: one by exacting a higher percentage; a second by an increase of work in a given time. There is still another, by purposely giving to one or more of the papers such an unusual turn as is not anticipated in the general line of teaching pursued. The last method we think is hardly justifiable. Having reference to the programme of study and to former papers on the same subject, the course is freely construed into a breach of faith as between pupil and examiner.

These remarks will be deemed irrelevant by those who have heard no complaints in the direction indicated.

OF THE FIRST CLASS EXAMINATION I shall only say that I think we must all approve of the recent regulations by which honor undergraduates of our Universities are admitted as having passed an equivalent for the non-professional examination.

As before remarked, I regard our Departmental Examinations superior to those they superseded. At the same time, I do not think that their warmest admirers consider them incapable of improvement. Any reasonable suggestions to which our discussion may give rise will therefore be likely to receive due attention from the Minister and his advisers.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

UNIVERSITY OF TORONTO—ANNUAL EXAMINATIONS.

ARTS: MATRICULATION.

MATHEMATICS.

Examiner—F. HAYTER, B.A.

1. Define *ratio* and *proportion*. Prove that in every proportion the product of the extremes is equal to the product of the means.

Compare the rates of speed of two locomotives, one of which travels $397\frac{5}{8}$ miles in $11\frac{2}{3}$ hours, and the other $262\frac{4}{15}$ miles in $8\frac{1}{2}$ hours.

2. Describe the units of length, surface, and volume in the English and French systems. Given the numerical value of any length in one system, express it in the other.

3. A proprietor of Three per Cent. Consols receives his half-yearly dividend and lays it out in the purchase of more Consols at 90. His next half-year's dividend is £457 10s.; how much does this dividend exceed the former?

4. Simplify

(i) $\dfrac{acx^2+(ad-bc)x-bd}{a^2x^2-b^2}$

(ii) $\dfrac{x^2+3x+2}{x^2+2x+1} \times \dfrac{x^2+5x+4}{x^2+7x+12}$

(iii) $\left(\dfrac{ay}{x}\right)^{\frac{1}{2}} \cdot \left(\dfrac{bx}{y^2}\right)^{\frac{1}{3}} \cdot \left(\dfrac{y^2}{a^2b^2}\right)^{\frac{1}{6}}$

5. Divide by Horner's Method

(i) $x^6-x^2+10x-10$ by x^3-3x^2+4x-2.

(ii) $6x^4-23x^3+22x-16$ by $2x^2-5x-8$.

6. Solve

(i) $(1+x)^{\frac{1}{3}}+(1-x)^{\frac{1}{3}}=2^{\frac{1}{3}}$.

(ii) $\begin{cases} \frac{x}{9}+\frac{y}{8}=43 \\ \frac{x}{8}+\frac{y}{9}=42 \end{cases}$

(iii) $\begin{cases} 7yz=9(y+z) \\ xz=8(z+x) \\ xy=3(x+y) \end{cases}$

7. A messenger starts on an errand at the rate of 4 miles an hour; another is sent $1\frac{1}{2}$ hours after to overtake him; the latter walks at the rate of $4\frac{3}{4}$ miles an hour; when and where will he overtake him?

The road from a place A to a place B first ascends for 5 miles, is then level for 4 miles, and afterwards descends for 6 miles, the rest of the distance; a man walks from A to B in 3 hours 52 min.; the next day he walks back to A in 4 hours, and he then walks half way to B and back again in 3 hours 55 minutes; find his rates of walking up hill, on level ground, and down hill.

8. Solve

(i) $x^2-2x+6(x^2-2x+5)^{\frac{1}{2}}=11$

(ii) $\begin{cases} x^4+y^4=257 \\ x+y=5 \end{cases}$

(iii) $\begin{cases} a^xb^yc^z=l \\ a^yb^zc^x=m \\ a^zb^xc^y=n \end{cases}$

9. From a given point draw a straight line equal to a given straight line.

10. If one side of a triangle be produced, the exterior angle is greater than either of the interior opposite angles.

From a given point there can be drawn to the same straight line only two straight lines equal to one another.

11. If a straight line touches a circle, and from the point of contact a straight line be drawn cutting the circle, the angles made by this line with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.

P and Q are two points in the circumference of two concentric circles. The angle included between the tangents at P and Q is equal to that subtended at the centre by PQ.

SOLUTIONS.

1. $\frac{397\frac{5}{6}}{11\frac{2}{5}} \div \frac{262\frac{4}{13}}{8\frac{4}{9}} = \frac{91}{81}$.

3. Amt. of stock $\times \frac{1\frac{1}{2}}{100}$ + amt. of stock $\times \frac{1\frac{1}{2}}{100} \times \frac{1\frac{1}{2}}{90} = 457.5$.

$\therefore$ amount of stock $= 30{,}000$.

$\therefore$ excess required $= 3000 \times \frac{1\frac{1}{2}}{100} \times \frac{1\frac{1}{2}}{90} =$ £7 10s.

4. (1). $\frac{cx+d}{ax+b}$. (2) $\frac{x+2}{x+3}$. (3) $\left(\frac{y}{x}\right)^{\frac{1}{6}}$

5. (1). x^3+3x^2+5x+5. (2). $3x^2-4x+2$.

6. (1). Cubing both sides

$$1+y+3(1-x^2)^{\frac{1}{3}}\{(1+p)^{\frac{1}{3}}+(1-x)^{\frac{1}{3}}\}+1-x=2,$$

or $3(1-x^2)^{\frac{1}{3}}(2^{\frac{1}{3}})=0$, or $x=\pm 1$.

(2). 144, 216.

(3). Equations become

$$7=\frac{9}{z}+\frac{9}{y}, \text{ \&c. } x=-\frac{114}{23},\ y=\frac{144}{71},\ z=\frac{144}{41}.$$

7. If x be the time $4x=(x-1\frac{1}{2})\,4\frac{3}{4}$, or $x=9\frac{1}{2}$.

If x, y, z be the rates of walking up hill, on the level, and down hill, $\frac{5}{x}+\frac{4}{y}+\frac{6}{z}=3\frac{5}{6}\frac{2}{6}$, &c. $x=3,\ y=4,\ z=5$.

8. (1). Completing square $x^2-2x+5+6\sqrt{x^2-2x+5}+9=25$.

$\therefore x^2-2x+5=4$ or 64,

$\therefore x=1$, or $1\pm 2\sqrt{15}$.

(2). Squaring the second and subtracting $xy(4x^2+8xy+4y^2-2xy)=368$, or $xy(100-2xy)=368$; whence $xy=46$ or 4. Then

$x+\frac{46}{x}=5$; $\therefore x=\frac{1}{2}(5\pm\sqrt{-159})$. Also, $x+\frac{4}{x}=5$;

$\therefore x=4$ or 1.

(3). Taking logarithms $x\log a+y\log b+z\log c=\log l$, &c.

Let O be the common centre, A the point where the tangents intersect, and K the intersection of PA, OQ. Then angles at P and Q are equal; also angles PKO, QKA; $\therefore$ angles POQ, PAQ are equal.

EUCLID—HONORS.

Examiner—F. Hayter, B.A.

1. The angles which one straight line makes with another upon one side of it are either two right angles or are together equal to two right angles.

2. If the square described upon one of the sides of a triangle be equal to the squares described upon the other two sides of it, the angle contained by these two sides is a right angle.

3. If a straight line be divided into any two parts, the rectangles contained by the whole and each of the parts are together equal to the square on the whole line.

4. Describe a square which shall be equal to a given rectilineal figure.

5. Find the centre of a given circle.

6. If two circles touch each other externally in any point, the straight line which joins their centres shall pass through that point of contact.

7. From a given circle cut off a segment which shall contain an angle equal to a given rectilineal angle.

8. Inscribe a circle in a given triangle.

9. If a straight line be drawn parallel to one of the sides of a triangle, it shall cut the other sides, or these produced, proportionally.

10. Triangles which have one angle in the one equal to one angle in the other, and their sides about the equal angles reciprocally proportional are equal to one another.

11. Rectilineal figures which are similar to the same rectilineal figure are also similar to one another.

12. If one angle of a triangle is equal to the sum of the other two, the greatest side is double of the distance of its middle point from the opposite angle.

13. One of the diagonals of a parallelogram being given, and the angle which it makes with one of the sides, complete the parallelogram, so that the other diagonal may be parallel to a given line.

14. Describe a rectangle equal to a given square, and having one of its sides equal to a given straight line.

15. Two points are taken in the diameter of a circle at equal distances from the centre. Through one of these draw any chord, and join its extremities and the other point. The triangle so formed has the sum of the squares of its sides invariable.

16. If ABC is a triangle described in a circle, and the tangent at A meets BC produced in D, prove that

$$CD : BD = CA^2 : BA^2$$

SOLUTIONS.

12. Let ABC be the triangle, and $A = B + C$. Make $CAD = ACD$; then $BAD = ABD$; $\therefore CD = DA = DB$.

13. Make angles at the ends of the given diagonal and on opposite sides of it equal to the middle point of this diagonal draw a line parallel to the line given in position.

14. An extension of Prop. 44, Bk. I.

15. A, B be the points, O the centre, CBD the chord. Then $AC^2 + CB^2 = 2CO^2 + 2OB^2 =$ const.; so $AD^2 + DB^2 =$ const.; and rectangle $CB.BD$ is const. Hence $AC^2 + AD^2 = CB^2 + BD^2 + 2CB.BD$ is const.; $\therefore AC^2 + AD^2 + CD^2$ is const.

16. The triangles DCA, DAB are similar.

$$\therefore \frac{CD}{CA} = \frac{DA}{AB} \text{ and } \frac{AB}{BD} = \frac{AC}{AD}$$

$$\therefore \frac{CD}{BD} \cdot \frac{AB}{CA} = \frac{AC}{AB}, \text{ or } \frac{CD}{BD} = \frac{AC^2}{AB^2}$$

ALGEBRA—HONORS.

Examiner: A. K. Blackadar, B.A.

1. Multiply $a^{-2} - 2 + a^2$ by $a^{-1} - 2 + a$, and divide the product by $a^{-2} - a^2 - 2a(a^{-2} - 1)$.

2. Divide $\frac{1+x^3}{(1-x)^3}\left(\frac{1}{1-x} - \frac{x}{1-x^2} + \frac{x^2}{1-x^3}\right)$

by $\frac{1-x+x^2}{(1-x)(1-x^2)(1-x^3)}$.

3. Resolve into factors:

(1) $2x^3 - 6x^2 - x + 3$.

(2) $2ab + (a+b)\{(a+b)^2 + 3(a-b)^2\} + 8a^2b^2$.

If $a+b+c = 2s$, shew that

$s(s-b)(s-c) + s(s-c)(s-a) + s(s-a)(s-b) - (s-a)(s-b)(s-c) = abc$.

4. Define the terms *Common Divisor* and *Common Multiple*, and prove that every common multiple of two algebraic expressions is a multiple of their least common multiple.

If $p^2 + pq + q^2 = 0$, shew that $x^2 + px + p^2$ and $x^2 + qx + q^2$ have a common divisor $x + p + q$, and a common multiple $x^3 - p^3$ or $x^3 - q^3$.

5. Find the values of x and y from the equations

$$\begin{cases} a_1x + b_1y + c_1 = 0 \\ a_2x + b_2y + c_2 = 0 \end{cases}$$

by the method of (1) substitution, (2) comparison, (3) elimination by means of arbitrary multipliers.

Find the relation between the constants when the values of x and y are indeterminate.

6. Solve the equations:

(1) $\frac{a}{x-a} + \frac{b}{x-b} + \frac{c}{x-c} = \frac{abc}{(x-a)(x-b)(x-c)}$.

(2) $\sqrt{x^2 + 3x - 10} + x = \sqrt{x+5} - 5$.

(3) $\left.\begin{array}{l} xz + yx = xy, \\ x^2(5z + y) = 5yz, \\ 10z - 6x^2 = 10xz. \end{array}\right\}$

7. Show how to find the product of two simple surds $\sqrt[m]{a}$ and $\sqrt[n]{b}$.

From the equation $x^4 - 10x^2 + 1 = 0$, find the values of x in the form of the sum or difference of two surds; and the values of $\frac{1}{x}$ correct to three decimal places.

8. Insert m arithmetic means between a and b.

If 1 be the $(m+1)$th term in the *A.S.* of which the first term is $\frac{m}{n}$ and the last term is $\frac{n}{m}$, shew that the sum of the series is

$$\frac{(m+n+1)(m^2+n^2)}{2mn}$$

9. Sum the series

$$\frac{3}{\sqrt{3}} + \frac{\sqrt{3}}{\sqrt{2}} + \frac{1}{2}\sqrt{3} + \ldots$$

to $2n$ terms, and to infinity.

10. Find the number of permutations of n things taken r at a time.

Find the number of permutations of the letters in the word *Toronto*, taken all together.

How many different numbers, each containing 6 figures, can be formed out of the 10 digits, in each number two figures at least being alike?

11. Find the greatest term in the expansion of $(x + a)^n$, n being a positive integer.

Write down the 7th term in the expansion of the square root of $(1 - \sqrt{x})^3$.

Shew that

$$n^{-n} = \left\{\frac{1}{\lfloor 2} - \frac{2n-1}{\lfloor 3} + \frac{(2n-1)(3n-2)}{\lfloor 4} - \ldots\right\}^{n-1}$$

SOLUTIONS.

1. $= \frac{(a^{-1}-a)^2(a^{-1}-2+a)}{(a^{-1}-a)(a^{-1}+a-2)} = a^{-1} - a$.

2. $(1+x+2x^2+x^3)\ \frac{1+x}{1-x}$.

3. (1) $(x-3)(x\sqrt{2}+1)(x\sqrt{2}-1)$.

(2) $= -2ab + 4(a^3+b^3) + 8a^2 + b^2 = 2(a+2b^2)(b+2a^2)$.

(3) $= s\{3s^2 - 2(a+b+c)s + (ab+bc+ca)\} - \{s^3 - (a+b+c)s^2 + (ab+bc+ca)s - abc\}$, which, on substituting $2s$ for $a+b+c$, reduces to abc.

4. On substituting $-(p+q)$ for x in x^2+px+p^2 and x^2+qx+q^2, we see that $x+p+q$ is a factor of both provided $p^2+pq+q^2=0$. The factor will be contained in x^2-px+p^2 $x-q$ times, and in x^2+qx+q^2 $x-p$ times; hence C. M. is x^3-p^3 or x^3-q^3.

5. The values of x and y are indeterminate when they assume the form $\frac{0}{0}$; which requires $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$,

there being in this case evidently but one independent equation.

6. (1) $x = \frac{ab+bc+ca \pm \sqrt{a^2b^2+b^2c^2+c^2a^2}}{a+b+c}$.

(2) Equation becomes $\sqrt{(x+5)(x-2)} + (x+5) = \sqrt{(x+5)}$,

$\therefore x+5 = 0$ gives one root $x = -5$, and others are obtained from $\sqrt{x-2} + \sqrt{x+5} = 1$, where $x = \frac{-5 \pm \sqrt{-143}}{6}$.

(3) From (2) & (3) subtracting $x^2 = \frac{5z(y-1)}{y-3}$

Also from same dividing $\frac{5z+y}{10y+6} = \frac{y}{2}$, or $z = \frac{2y}{5(1-y)}$.

From first of these with (1) $\frac{y^2z^2}{(y-z)^2} = \frac{5z(y-1)}{y-3}$, and substituting the value of z in terms of y, and simplifying $3y^2 - 4y + 1 = 0$, *i.e.*, $y = 1$ or $\frac{1}{3}$, and thence the values of z and x may be obtained.

7. $\sqrt[m]{a} \times \sqrt[n]{a} = \sqrt[mn]{a^n} \times \sqrt[mn]{a^m} = \sqrt[mn]{a^{m+n}}$.

$x^2 = 5 \pm 2\sqrt{6}$; $\therefore x = \pm(\sqrt{2} \pm \sqrt{3})$

$$\frac{1}{x} = \frac{1}{\sqrt{2}+\sqrt{3}} = \frac{\sqrt{3}-\sqrt{2}}{3-2} = .317+$$

8. From formula $l = a + (n-1)d$, $1 = \frac{m}{n} + m.d$, $\therefore d = \frac{n-m}{mn}$.

Also from same formula $\frac{n}{m}=\frac{m}{n}+$(no. of terms—1) $\frac{n-m}{mn}$ giving no. of terms$=m+n+1$

$\therefore s=\left\{2\frac{m}{n}+(m+n)\frac{n-m}{mn}\right\}\frac{m-n+1}{2}=$given expression.

9. $r=\frac{1}{\sqrt{2}}$; $\therefore S=\frac{3}{\sqrt{3}}\frac{\left(\frac{1}{\sqrt{2}}\right)^{2n}-1}{\frac{1}{\sqrt{2}}-1}=\sqrt{3}\frac{\frac{1}{2^n}-1}{\frac{1}{\sqrt{2}}-1}=$

And $\Sigma=\frac{\sqrt{3}}{1-\frac{1}{\sqrt{2}}}=\frac{\sqrt{6}}{\sqrt{2}-1}$.

10. (1) $\frac{\lfloor 7}{\lfloor 2\ \lfloor 3}$. (2). By Todhunter, § 501, the number of permutations of 10 things where each may occur once, twice ..... six times is 10^6. From these we are to exclude the ones in which a particular digit occurs but once, of which there are $\frac{\lfloor 10}{\lfloor 4}$, making $10^6-\frac{\lfloor 10}{\lfloor 4}$ in all. But we must also exclude those numbers in which ciphers occur to the left. Thus the number in which one cipher occurs to the left is $10^5-\frac{\lfloor 10}{\lfloor 5}$; in which two ciphers occur $10^4-\frac{\lfloor 10}{\lfloor 6}$, &c.

11. $+\frac{\frac{3}{2}\left(\frac{3}{2}-1\right)\ldots\left(\frac{3}{2}-5\right)}{\lfloor 6}x^3$.

$$n^{\frac{n}{1-n}}=n^{-1}\cdot n^{\frac{n}{n-1}}=n^{-1}\left\{1-(1-n)\right\}^{\frac{1}{1-n}}$$
$$=n^{-1}\left\{1-1+\frac{n}{\lfloor 2}-\frac{n(2n-1)}{\lfloor 3}+\text{&c.}\right\}$$
$$=\frac{1}{\lfloor 2}-\frac{2n-1}{\lfloor 3}+\text{&c.}$$

TRIGONOMETRY—HONORS.

Examiner: A. K. Blackadar, B.A.

1. Define the common logarithm of a number.

If x be the logarithm of N to base 2, and 41·664 be the logarithm of N to base 8; find the common logarithm of x.

2. Prove

(1) $\log\frac{ab}{c}=\log a+\log b-\log c$.

(2) $\log\sqrt[n]{a^m}=\frac{m}{n}\log a$.

(3) Find Log cos 30°.

3. Perform the following operations by means of logarithms:

(1) Divide 416·64 by $\sqrt{623640}$.

(2) Find the value of $\frac{(\cdot25)^{-5}\times\sqrt[3]{\cdot072}}{(527\cdot58)^{10}}$

4. Having given

L sin 28°21′ = 9·676562,
Difference for 1′ = 234,
L tan 61·39′ = 10·267952,
Difference for 1′ = 302,

Find (1) L cos 28° 21′ 20″; (2) L sin 123° 18′ 30″;
(3) the angle the Log of whose secant is 10·055469.

5. Prove

(1) $\tan A=\sqrt{\sec^2A-1}$;
(2) $\cos\theta=\cos(2n\pi\pm\theta)$.
(3) $\cos^2\theta-\tan^2\theta=\frac{4}{\tan 2\theta\sin 2\theta}$.

6. Prove the following, when $A+B$ is less than 90°, and without assuming the formulæ for sin $(A+B)$ and cos $(A+B)$:

(1) $\tan(A+B)=\frac{\tan A+\tan B}{1-\tan A\tan B}$.

(2) $\cos 2A=1-2\sin^2A$.

7. If tan A and tan B be the roots of the equation $x^2-4nx+1=3n$, shew that
$A+B=2\tan^{-1}2^{-1}$ or $=2\tan^{-1}(-2)$.

8. In any triangle ABC, prove the following formulæ:

(1) $\frac{\sin A}{a}=\frac{\sin B}{b}=\frac{\sin C}{c}$.

(2) $\tan\frac{1}{2}A=\sqrt{\frac{(s-b)(s-c)}{s(s-a)}}$.

If AD bisects the angle A, and AE is drawn perpendicular to the base BC, shew that

$$\cos DAE=\frac{b+c}{a}\sin\tfrac{1}{2}A.$$

9. Having given

(1) $b=103\cdot5$, $c=520\cdot14$, $C=90°$, solve the triangle.
(2) $a=388\cdot38$, $b=139\cdot20$, $C=91°\ 48'$, find A, B and c.

10. If $\left.\begin{matrix}\sin\beta-\cos\alpha\alpha=\\ \sin\alpha\ -\cos\beta=b\end{matrix}\right\}$

shew that $\tan\frac{1}{2}(a-\beta)=\frac{a-b}{a+b}$,

and $\sin(a-\beta)=\frac{a^2-b^2}{a^2+b^2}$.

11. A person finds the elevation of the *bottom* of a flagstaff on a tower to be 30°; receding 60 feet up a hill, which is inclined 24° to the horizon, he finds the elevation of the *top* of the staff to be 30°; shew that the length of the flagstaff is 56·050 feet.

Number.	Log.	Angle.	Log.
20000	30103	tan 78° 31′	10·69241
30000	47712	sin 88° 12′	9·99979
62364	79494	cosec 68° 42′	10·03071
41664	61976	tan 24° 36′	9·66067
24918	39651	tan 44° 6′	9·98645
50974	70735		
10350	01494		
52758	72229		
38838	58926		

SOLUTIONS.

1. $2^x=N=8^{41.664}=2^{41.664\times3}$; $\therefore x=41.674\times3$, and $\log x=2\cdot09688$.

2. (1) and (2) book-work. (3). $=\frac{1}{2}\log.3-\log 2+10=9.03753$.

3. (1) ·52758.

(2) $=\frac{\left(\frac{1}{2^2}\right)^{-5}\times\left(\frac{2^3\times3^2}{10^3}\right)^{\frac{1}{3}}}{(527.58)^{10}}=\frac{2^{11}\times3^{\frac{2}{3}}}{(527.50)^{10}\times10}$, the log. of which appears to be $\bar{2}5\cdot40651$, the number corresponding to which is not given, 39651 having evidently been the logarithm obtained.

4. (1) $A = 28° 21' 20''$. $L \cos. A = \log. \cos. A + 10 = \log. \sin A \cot A + 10 = \log \sin A \tan (90 - A) + 10$; $\therefore L \cos 28° 21' 20''$ $-$ log sin 28° 21′ 20″ + log tan 61° 38′ 40″ + 10 = 9·94481.

(2) $L \sin 123° 18' 30'' = \log. \sin 2(61° 39' 15'') + 10 = \log. 2 \sin 61''$ &c., cos 61° &c. + 10 = log. 2 + log. cos 61°...tan 61°... + log. sin 28° 20′ 45″ + 10 = log. 2 + log. sin 28° 20′ 45″ + log. tan 61° 39′ 15″ + log. sin 28° 20′ 45″ + 10 = 9.922066.

(3) $10.055478 = L \sec A = \log \frac{1}{\cos A} + 10 = -\log. \cos A + 10$; $\therefore L \cos A = 9.944531$. Now by (1) $L \cos 28° 21' 20'' = 8.944491$; also it may be shewn in the same way that $L \cos 28° 21' = 9.944514$; $\therefore$ difference for $20'' = 23$, and $A = 28° 20' 45''$.

5. (3) $= \frac{\cos^4\theta - \sin^4\theta}{\sin^2\theta \cos^2\theta} = \frac{4(\cos^2\theta + \sin^2\theta)(\cos^2\theta - \sin^2\theta)}{4 \sin^2\theta \cos^2\theta}$

$= \frac{4 \cos 2\theta}{\sin^2 2\theta} = \frac{4}{\tan 2\theta \sin 2\theta}$.

7. From Theory of Quadratics $\tan A \tan B = 1 - 3n$, $\tan A + \tan B = 4n$, $\therefore \tan (A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B} = \frac{4}{3}$.

Also since $\tan (A+B) = \frac{2 \tan \frac{A+B}{2}}{1 - \tan^2 \frac{A+B}{2}}$; $\therefore \tan \frac{A+B}{2}$

$= \frac{-1 \pm \sqrt{1 + \tan^2 (A+B)}}{\tan (A+B)}$

$= \frac{1}{2}$ or -2; and $\frac{A+B}{2} = \tan^{-1} \frac{1}{2}$ or $\tan^{-1}(-2)$.

8. (3) True if $\frac{\cos DAE}{\sin \frac{1}{2} A} = \frac{b+c}{a}$, if $\frac{\sin ADB}{\sin DAB} = \frac{b+c}{a}$,

if $\frac{C}{BD} = \frac{b+c}{a}$, if $\frac{a}{BD} = \frac{b+c}{c}$, if $\frac{DC}{BD} = \frac{b}{c}$.

9. (1) $a = 509·74$ $\{$use $a = \sqrt{(c+b)(c-b)}\}$, $A = 78° 31'$, $B = 11° 29'$.

(2) $A = 68° 42'$, $B = 19° 30'$, $c = 416·64$.

10. (1) $a - b = \left(-2 \cos \frac{\alpha+\beta}{2} + 2 \sin \frac{\alpha+\beta}{2}\right) \sin \frac{\alpha-\beta}{2}$.

$a + b = \left(-2 \cos \frac{\alpha+\beta}{2} + 2 \sin \frac{\alpha+\beta}{2}\right) \cos \frac{\alpha-\beta}{2}$; and divide.

(2) $a^2 - b^2 = -\cos 2\beta + \cos 2\alpha + 2 \sin (\alpha - \beta)$

$= -2 \sin (\alpha - \beta) \sin (\alpha + \beta) + 2 \sin (\alpha - \beta)$.

$a^2 + b^2 = 2 - 2 \sin (\alpha + \beta)$; divide

11. From triangle formed by drawing a line from bottom of staff parallel to the hill $\frac{x}{60} = \frac{\sin 54°}{\sin 60°}$

$\therefore x = \frac{\frac{1}{4}(1+\sqrt{5})}{\frac{\sqrt{3}}{2}} \times 60 = 56·050 \ldots$

Practical Department.

HOW CHILDREN SHOULD BE TAUGHT TO READ.

Mr. Editor,—Believing that no subject is so badly taught in the schools of Ontario as Reading, I propose, with your permission, to conduct a discussion in your columns on the methods of teaching it with a view of learning which of them is the simplest and most philosophical. During the past two years, I have had the honor of advocating at the Provincial Teachers' Convention, and at several County Conventions, a *self-consistent phonic system*; that is, a system which gives the child the *sounds* and *powers* of the letters at once, and at first gives it but ONE SOUND FOR EACH. During the past year, Professor Meiklejohn, of the University of St. Andrews, has published a little work, advocating precisely the same system. This *One Sound System* I purpose to expound and defend.

With reference to other systems of teaching reading, my position will be friendly to the various phonetic methods; respectful to a sentence method as an *introduction* to the process of learning to read; indifferent to the alphabetic method (if there can be such a thing) and decidedly antagonistic to the word method as understood and taught in Ontario.

I hope that every statement I make may be fairly criticized, and if necessary corrected. I desire to reach the truth, and I am quite willing to be hurt a little while climbing.

James L. Hughes, P. S. Inspector.

[We will gladly open the columns of the Journal for the discussion of the subject proposed by Mr. Hughes.—Ed.]

Before attempting to explain the method by which I think the Phonic System should be taught, I think it desirable to deal with the

OBJECTIONS

which are urged against it. This will, I hope, lead many of my readers to enter upon the consideration of the subject unprejudiced by the misrepresentations which have been made concerning it. It is held,

1. *That it cultivates the ear rather than the eye.*

This objection is urged through a misconception of the system, resulting from its name. The Phonic System does not cultivate the ear at the expense of the eye, but in harmony with it. The eye is used as much by the Phonic System as by any other system. Whatever may be the method by which reading is taught, the forms of the letters and of the words they make, must be conveyed to the brain in some way, and the most convenient way for all but blind persons is through the eye. The eye must be thoroughly trained to see accurately, and to distinguish slight differences in form readily, in order that rapid progress may be made in learning to read by any system. That the Phonic and Phonetic systems do not depend for their success upon mere cultivation of the ear is clearly shown by the fact that deaf mutes are taught to read aloud by these systems.

It is surely not a weakness of the Phonic System, however, but a strong point in its favor, that it cultivates the ear in addition to the eye. No one will attempt to maintain that to strengthen one faculty will weaken another, or that to render one acute will blunt the other, providing that both have sufficient exercise. Childhood delights in the exercise its faculties, because by activity these faculties attain their growth and power. The more of its faculties called into action by any work or play, the more intense and lasting will be the interest of the child. In fact, the eye, the ear, the hand, and every mental and physical power of the child should be used as far as possible in teaching to read.

2. "*There are so many irregularities in the Notation of the English Language that a child must be confused by the Phonic System.*"

As the Phonic System has generally been taught, this is a valid objection, so far as teaching how to read the English language is concerned. There are "two malformations which infest our speech" to such an extent that neither the eye nor the ear can become a reliable guide in reading it. If a child is even introduced to a primer which contains only the words which he speaks correctly, and whose meaning he fully understands, he will find the same letter representing so many sounds, and the same sound represented by so many letters, that he must be perplexed beyond measure by the incongruous mixture. Professor Meiklejohn, in his remarkable little work, "The Problem of Teaching to Read," published by Chambers, sums up a bill of indictment against our English notation as follows:

"The eye is trifled with, and a multitude of confusing appearances presented to it; and so the attention and the memory of the child are weakened from the very outset.

"The ear is not kept faith with: the child has to give different sounds to the same symbol; what sound to give is always a question with him; and so his judgment is puzzled. An alphabet of 26 letters is made to do the work of 45 sounds. In this alphabet of 26 letters, there are now only 8 true and fixed quantities. The remaining 18 have different values at different times and in different positions, and sometimes they have no value at all. In other words they have a topographical value. Some of these 18 letters do—in addition to their own ordinary work—the work of three or four others. A vowel may have from 20 to 30 functions in our English notation; a consonant may have two or three. There are 104 ways of representing to the eye 13 vowel sounds. Six of these vowel sounds appropriate to themselves 75 ways of getting printed."

Certainly if the child had to be brought into contact with this mass of contradictions at the beginning of his experience in learning to read, there would be no perfect system of teaching him. Even then the Phonic would be of most use to him, but it would have to be hedged in and bolstered up by so many special rules and bewildering exceptions, that it would be of comparatively little value.

It is not necessary, however, to perplex him with any of the inconsistencies of the language at the outset of his arduous labor. Give him but one sound or power for each letter or combination, and let his first primer contain only words in which the given sounds occur.

It is not a very difficult matter to prepare a series of many interesting lessons in a *one-sound alphabet.* With these lessons the pupil will easily learn the, to him, wonderful fact that printed marks may represent the words which he speaks. He will advance step by step with the most perfect confidence, and will in a few weeks have completed his first primer. He finds the present always in harmony with the past, and the knowledge gained is always available for practical use in the acquisition of more. Having mastered a primer in a *one sound alphabet,* there is little left for him to do; association of ideas, the connection of words in simple sentences, will do the rest.

3. "*There is not time in an ungraded school to teach reading by the Phonic System. It requires too much practice.*" This objection is based upon the incorrect assumption that it takes longer to teach by this than by some other method. Whatever be the time allotted to reading on the time-table of any school, be it five minutes per day or forty, I hope to be able to prove that the progress made will be more rapid and more thorough by the Phonic than by any other system.

4. "*Poor teachers cannot succeed in teaching by the Phonic Method.*" This may be an argument against poor teachers, but not against any system of teaching reading or any other subject. In answer to this objection it will only be necessary to state: 1. That all who can learn to teach at all, can learn to teach reading by the Phonic System; 2. That the teacher has really less work to do in teaching by the Phonic than by any other system, as the pupils are rendered more independent by it than by any other from the very beginning.

Further objections will be thankfully received.

The complete record of the Caledonia High School for the last year shows that three passed the Matriculation in Arts at Toronto University Board examination, six passed the the third-class examination, and nineteen passed the Intermediate.

ELOCUTIONARY STUDIES.

BY RICHARD LEWIS, PROFESSOR OF ELOCUTION, TORONTO.

The Trial Scene—Merchant of Venice (Concluded).

The interest of this wonderful scene seems to reach its climax when Portia enters. The catastrophe is about to be consummated. The Jew has so ably replied to every objection, that we momentarily expect the dreadful termination. Antonio must die, the victim of the implacable revenge which has swept away all legal opposition to its thirst for blood; and probably the feeling of the court is that the interruption caused by the appearance of a mere stripling as the advocate for the doomed man will only add to his tortures by exciting hope where despair had given the fortitude and the calmness which mercifully accompany the inevitable. It almost rises like some rude interruption that violates the solemnity of a death-bed scene. But the magician whose wand can transform horror into confidence and hope is Shakespeare, and the young and learned doctor is Portia. Mrs. Jamieson, in her "Characteristics of Women," has produced a charming analysis of Portia, rich in its fervid conception and poetry, and beautiful in the sympathy and admiration which one gifted woman feels for another. Hazlitt formed a very opposite estimate. "Portia," he says, "has a certain degree of affectation and pedantry which is very unusual in Shakespeare, but which perhaps was a proper qualification for the office of a civil doctor, which she undertakes and executes so successfully." This harsh criticism should not guide us for a moment in our conception of the character. Hazlitt was subject to fits of despondency and moroseness, which he strengthened by recourse to copious draughts of immoderately strong tea, under the influence of which he probably flung off this savage judgment. His description of Juliet, written perhaps under the inspiration of some more generous libation, and fully equal in its eloquence to the description of Portia by Mrs. Jamieson, would in many respects apply to Portia. At least it would be more just to the tenderness of her nature and the sincerity of her purposes. Probably there is an aspect of pedantry betrayed in her anxiety to play the "learned doctor" before the chief magistrate of the republic. But it is so slight, so eclipsed by the very spirit of mercy that animates her and prompts the "heavenly eloquence" of her immortal speech, that it is impossible to conceive of affectation in a soul so deeply and tenderly moved, and inspired with the high purpose of saving a life which she so much honored. The student must understand also that Portia was not moved by any vindictiveness towards the Jew. She wishes to be just and merciful. She appeals to his humanity, and, failing utterly in that, she appeals to his cupidity, and offers him thrice the money due. She wishes to spare him the heavy penalties which she knew would fall upon him if he persisted in having his bond.

In reading any dramatic scene where characters have to be impersonated, it is not necessary that the reader should imitate the voices of those characters by unnatural efforts. All that is demanded is that the reader shall speak the part of Portia with a gentler, softer, more womanly quality—the part of Shylock in deeper, stronger, and occasionally harsher tones of voice.

Portia puts the question:

"Is your name Shylock?"

Shylock answers:—"Shylock is my name."

But the method of giving this answer must be strongly characteristic. The feeling of the Jew is that of contempt for the stripling who has dared to interrupt the course of justice, so clear, as it appears to Shylock, that it only now needs its final consummation,

He therefore glances contemptuously at the young judge, and gives his answer in slow, sullen and measured tones.

PORTIA.—Of a *strange* nature is the suit you follów;
Yet in such rule | that the *Venètian làw*
Cannot *impúgn* you | as you do proceed.—
Yóu | stand within his danger, do you nót?

ANTONIO.—Ay, so he sáys.

PORTIA.—Do you *confess* the bónd?

ANTONIO.—I do.

PORTIA.—Then *must* the Jew be *mèrcifùl.*

These words are delivered earnestly and tenderly, for Portia appeals to his humanity. But the Jew is stern and unrelenting. His self-esteem, and the certainty that the Venetian law cannot impugn him, rise in fierce antagonism to that "must." Hence, scorn and defiance are flung into his repetition of "must." It demands the full arbitrary emphasis, which is expressed by a slight pause after compulsion, with full force and a prolonged downward inflection on the special word. This was the reading of Edmund Kean. Before his time, the actors gave the emphasis to "compulsion;" but Kean, with a juster conception of the Jew's state of mind, introduced the above reading; the theatre applauded, —for theatrical audiences then were able to appreciate a new reading, and the critics at once confirmed its truthfulness and force.

SHYLOCK.—On what compulsion | MÙST I? Tell me *thàt.*

There is always the tendency to recite hackneyed passages introduced into every book of "Selections for Reading." in the usual hackneyed declamatory form. Let the reader forget all such "school" methods, conceive all the circumstances—a gentle and gifted woman, pleading with all the fervour and tenderness of her sex for the life of a fellow-creature, appealing to one whom she yet believes to be susceptible to pity,—and the first qualification for reading the speech on *Mercy* will be secured. Tenderness and earnestness pervade the delivery of the first lines; but, as Portia advances in her appeal, she is inspired with the zeal and faith of a saint, and the chords of feeling touched by a religious passion pour forth a heavenly music, breathing angelic strains which, in the delivery, demand the highest solemnity of aspect and tone, and the deepest expression of religious reverence.

"The quality of *mércy* || is not *strained*"
(That is, it is not forced on compulsion);
"It droppèth | as the gentle ràin from heáv'n |
Upon the place benèath.—It is *twice* | bless'd;
It blesseth hìm that *gíves* | and hím that tàkes:
'Tis mightiest | *in* | the mightiest:—it becomes
The throned monárch | *better* than his *crówn*;
His scéptre | shows the force | of *temporal* power,
The attribute | to awe and majesty,
Wherein doth sit | the dread proud *fear* of kings."

The last two lines must be read in a deeper pitch than the preceding lines. A similar depth of tone should also mark the succeeding lines; but the religious solemnity and fervor pervade the expression, and the speaker becomes more animated as she is inspired by the grandeur of the sentiment.

"But *mércy* | is *abòve* | this scéptred sway—
It is enthróned in the *hèarts* of kings,
It is an attribúte | of Gòd | *himsèlf*"

(Read this line deeper and slower as if overpowered by the awfulness and sanctity of the thought),

"And èarthly power | doth *thèn* | shew lìkest Gód's
When mercy séason's jùstice.=Therefore | Jéw |
Though justice *bé* thy pléa | consider *this* |
That | in the course of *jústice* | none of us
Should see *salvàtion*—we do *prày* | for *mèrcy* |
And that same prayer | doth teach us | *àll* | to *render*
The *deèds* of mercy."

I have followed with very slight additions the markings of Mr. George Vandenhoff for the pauses, inflections and emphasis of this passage. I know of no living authority higher than that of this accomplished elocutionist for the guidance of the student, and the correctness of his markings will be fully supported by every reader who carefully examines the nature of the sentiments and understands the principles involved.

But the eloquent appeal of Portia utterly fails in moving Shylock, and sustaining the stern and scornful expression which had marked his first answer, he replies:

SHYLOCK.—"*My* deéds upon *my* heàd! I crave the *làw*,
The penalty and forfeit of my *bònd.*"

The passages that follow have no special difficulty, saving that Bassanio is warmed and excited in his anxiety to save his friend, and that excitement passes into the highest indignation in delivering the line—

"And curb this *cruel* DEVIL | of his *will.*"

The answer of Portia is given with judicial calmness. Surely this does not betray the "pedantry" of which Hazlitt complains. It confirms the logic of Shylock, and wild with the triumph which this accession of legal sanction brings to his cause, he pours forth his approval in a spirit of uncontrollable joy.

SHYLOCK.—A *Daniel* come to judgment! Yea, a DANIEL,
O wise, young judge, how I do *hònor* thee.

The manner of the best actors in delivering these lines is to mark the first line with enthusiasm, and then in giving the second line to bend in obsequious reverence before Portia.

PORTIA.—I pray you, let me *lòok* | upon the bond.
SHYLOCK *(with hurried anxiety to please).*—Here it is, most *reverend* doctor, here it is.

The tone of uttering this passage, especially "reverend doctor," must be marked by an excess of flattering servility. As it is not genuine on the part of Shylock, it must from its nature and his inflexible character be overdone, and transparent in its hypocrisy.

PORTIA.—There's THRICE | thy money | offered thee.
SHYLOCK.—An *òath*, an OATH, I have an *oath* | in *hèaven:*
Shall I lay PERJURY | upon my sóul?
Nò, not for *Vènice.*

It is quite possible to believe that Shylock was sincere in his religious regard for his oath. To him there was nothing wrong in the pursuit of vengeance; and therefore this passage is delivered with hands and eyes uplifted, and with an expression of solemn reverence, as if the speaker trembled as he contemplated so heinous a sin as that of perjury. When Portia says:

"Be *mèrciful:*
Tàke thrice thy money; bid me *teàr* the bond,"

she holds the bond in her hands and is about to tear it, when Shylock arrests her act of mercy, and in the speech that follows he resumes much of his native sternness and dignity.

SHYLOCK.—When it is *paid* | according to the *tènour*—
It doth appear | you are a *wòrthy* júdge;
You *knów* the *láw*; your exposition |
Hath been most *sòund.*

Let the manner now become sterner and more dignified, warming however into passion towards the conclusion.

"I charge you *by* the law,
Whereof you are a well-deserving pillár,
(slightly obsequious)
PROCEED TO JUDGMENT. By my soul | I *swèar* |
There is no power | in the tongue of *màn*
To *altèr* mè. I stay here | *on my bònd.*"

The delivery of this oath must be slow and deliberate, marked by the fierce resolution which betrays the hatred that prompts it, yet controlled so as to suppress violence or rant. It is the skilful management of the conflicting passions involved that distinguishes

the great actor, and gives to his reading the force and reality of nature, and the commanding impressiveness and beauty of tragic poetry.

The details of preparation that mark the brief speeches of Portia again may have the aspect of pedantry,—but whoever has witnessed the performance of the play knows how these brief details sustain suspense and strengthen the interest and the terror of the scene.

PORTIA.—Therefore lay bare your bosom.

We may easily conceive how with womanly delicacy, and shrinking from a sight of pain, Portia would utter these words, her voice low, her face averted so as not to witness the dreadful act. But here Shylock loses all self-control in the expectation of gratifying his revenge.

SHYLOCK.— Ay, his BREAST:
So says the *bònd*: doth it not, noble júdge?
Nearest his HEART: those are the *very words*.

The best effect will be given to the delivery of this passage by speaking the words "Ay, his breast" and "nearest his heart" with an expression of the fiercest desire, flung especially into the words "breast" and "heart," while in the references to the bond and the appeal to the judge, the manner and tone are instantly changed to an obsequious regard for forms of law, as if they only were the motives and guides of his action. It is this contrast which gives the finest dramatic effect to the passage.

PORTIA.—It is so. Are there *balance* here to *weigh* the flesh?
SHYLOCK.—I have them ready.

The question of Portia has a deep and warning meaning. It is the last effort of mercy put forth to save the Jew from the penalty he is invoking, for it is the exactness of the weight of flesh that saves Antonio.

When every preparation is made Portia calls upon Antonio to make his final defence, and as its correct delivery is important I present it with the marks for pause, inflection and emphasis.

PORTIA.—Come, merchant, have you anything to sáy?
ANTONIO.—But little: I am arm'd and well prepar'd.
Give me your *hànd*, Bassànio: fare you *wèll!*
(Speak these words softly and with pathos.)
Griève not | that I am fallen to this, for *yóu;*
For herein | Fortune | shows herself more *kínd* |
Than is her cùstom: it is still her úse
To view | with *hollów èye* and *wrìnkled brów* |
An AGE | of *poverty; (utter this sentiment mournfully)*
from which *lingering pènance* |
Of such *mísery* | doth she cut me off. *(cheerfully spoken.)*
Commend me | to your honorable wife:
Tell her the process | of Antonio's *èn;*

Say | how I *lov'd* you, | speak me *fair* | in *déath;*
And, when the tale is tóld, bid her be *jùdge*
Whether Bassanio | *had not once a lòve.*

That is, a friend, and read the passage with increasing warmth and force. The cheerfulness is then resumed, and with the aspect of humor which Antonio assumes.

Repent not you that you shall lose a friénd,
And he repents not | that he páys | your dèbt;
For | if the Jew do cut but *deèp* enoúgh,
I'll pay it *presently*, with ALL my HÈART.

But the Jew becomes impatient. He sternly demands judgment.

SHYLOCK.—We trifle time; I pray thee pursue sentence.
PORTIA.—A *pound* of that same merchant's *flesh* | is thìne.

Force must be given to "pound" and "flesh," as if Portia still lingered on the hope that he would understand the condition.

SHYLOCK.—Most *rightful* jùdge!
PORTIA.—And you must cut this flesh from off his *breast.*
The law allows it and the court awards it.

This repetition of formal statements is not a mark of pedantry—it still indicates the desire of Portia to change by the very delay the purpose of the Jew; or by the exhibition of his relentless hatred to justify the last resource by which Antonio shall be saved. And the Jew is inflexible. With knife in hand and a brief exclamation he rushes towards Antonio—

SHYLOCK.—Most learned judge!
A SENTENCE! *Come*, PREPARE!

These words are uttered with the fiercest energy. The purpose is bloody and murderous; the resolution, irresistible and overmastering, towers above all opposition. Then Portia, calmly but firmly, with a dignity and nobleness of mien that instantly revive hope and restore confidence, utters her famous judgment.

PORTIA.—Tarry a little; there is | *something else.*
This *bónd*—doth give thee hére—NO JOT—OF BLÒOD.

This saving clause—the whole line—must be delivered slowly, as if weighing every word to make the judgment tell with more terrible effect on the Jew.

The words expressly are—a *pound* | of FLESH;—
But, in the *cùtting* it | if thou dost shed
ONE DROP | of Christian BLOOD—
(Let the pause be long here, and let the judgment that follows be given with great dignity and determination)
thy *lands* and *goods*
Are, by the *laws* of *Venice*—CONFISCÀTE |
Unto the *stàte* of Vènice.

SHYLOCK.—Is that the law? *(Half whisper and tremor.)*

This question must exhibit the terrible agony, the revulsion of feeling, which now overwhelms the Jew. It is not simply doubt—it is terror uttered with bated breath—a very sentence of death has been passed upon the Jew. He stands in dreadful suspense—the knife, the scales fall from his hands—he is defeated and prostrated by a judgment so unexpected, so unavoidable. He exhibits a sordid abjectness when he appeals for the "Principal." The collapse, the reaction, the agony of his defeat are at once awful and touching. These are the feelings which the reader must impersonate and realize if he would dramatically represent this unique and wonderful creation of Shakespeare.

The last words he hears as he leaves the court are the taunts and mockery of Gratiano. He does not reply, but he is supposed to turn slowly towards his tormentor as he is departing, to give him one look of withering scorn, and then to leave the scene of his punishment. Edmund Kean's last glance has become traditionally immortal. Few living have seen it; but it is recorded as being beyond description, withering and defiant. The writer has seen the younger Kean and Macready in this final act, and in both instances the facial expression and the glance of the eye were eloquent of scorn, and covered the mocker with unutterable contempt.

I cannot retire from this review without again doing what I have so often done—without urging upon the student the importance of realizing to himself the states of mind and the passions which govern these creations of the imagination. Froude says that "where the poet would create a character he must himself comprehend it first to its inmost fibre." Shakespeare did this. He became every character his imagination summoned into his presence. He sat as a king enthroned, beholding the beings of his fancy pass in review before him. But he did more. He stept down from his throne. He was possessed of them as a man might be of a spirit. He felt all the tenderness and anxiety of Portia. He was moved as Shylock was moved, with the bitterness of wrong, injustice, and hatred. For the time being he was that special character who speaks. All this filled the picture with the reality and strength of life. But mere sympathy will often lead to an extravagant display of feeling.

Shakespeare understood all this, and then he ascended his throne, and reason vindicated her empire. He controlled the subjects of his ideal world, guided and governed them so that they should never pass the boundaries of truth; and thus he made them in every respect representative and human. The reader must be governed by the same laws. The habit of studying in this method will not only stamp the representation and truth, but the study itself will then foster and strengthen the imagination. The art of the reader will be a success just as he is guided by the laws which govern and mature the mind of the poet, for poetry and elocution are kindred arts, and the cultivation of the latter educes and strengthens the faculties which create the former.

HOW TO SECURE ATTENDANCE IN THE COUNTRY SCHOOL.

G. HENRI BOGART.

DECORATION.

One of the numerous problems which vex the mind of every live, earnest teacher is, "How can I increase my average attendance?"

Now I propose giving a few methods for attaining this much-desired object. Not that I wish to set myself up as an example for my fellow-labourers to follow, but simply to give some of the methods of myself and others which I have adopted with success; and here let me remark that success here is a first requisite for success in the entire work of the school.

Who has not an image of the average rural "temple of learning" in his mind—a dim, barren, and cheerless place indeed? This will not interest nor attract your pupils; therefore as your first step you must DECORATE.

"I can't, for it would be too expensive," murmurs some Mr. Faintheart, who deserves to stick in the slough of despond during his natural life. True the poor pedagogue is not, as a rule, blessed with the superabundance of the "root of all evil," but then I'LL TRY can accomplish wonders.

Evergreens go a long way in the good work. Explain to your pupils that this is *their* house, erected for their especial benefit, and you desire them to bring some evergreens to make it more pleasant, and next morning they will come laden with branches of fir, pine, and cedar.

Don't undertake to do this alone, but call in the children to aid you. This is of prime importance. You must have them interested in the work. Call their attention to the fresh appearance imparted to the room, and the grateful, spicy odor pervading the apartment. So far, so good; but this is not enough. In these days of cheap pictures every teacher should own two or three good large chromos. They will last you many terms of school, and if judiciously chosen will brighten the dull old room wonderfully, and at the same time will develop the natural latent love of *art and the beautiful* in your pupils. Ask each family represented to loan at least one nice picture for the term. Simple woodcuts, cheaply framed, produce a very pleasing effect if nestled above the cluster of evergreen over your windows. Colored crayons cost but a trifle, and your programme nicely sketched on two sheets of unprinted newspaper and hung one on either side of the desk are nice. They will last if bound by pasting strips of muslin around the edges.

Of course map drawing is taught in your school. Offer to place some extra nice piece of work on the wall as a decoration, and then notice the increase in excellence of your pupils' work in this branch. (In parenthesis we will say that we do wish the elements of general drawing were also taught in all our schools.)

But those horrid windows! The fly specks, the grim spider-webs they disclose, and the unmitigated glare of sunshine they pour in. No wonder pupils attend irregularly. I would not desire to attend school were I compelled to sit and study in such a blinding sun. By all means wash off that horrid dirt, shut out that superfluous sunshine and add to the cheer of your rooms. Very nice printed and plain cottons for this purpose can be procured at a cost of ten cents or less per yard. You may purchase them yourself and carry them from place to place as you do your pictures; but a better plan would be to lay the matter before your trustees, and if they refuse, as they will sometimes do, go to your patrons and get them to subscribe a dime or a quarter as they may desire, and the matter of expense is soon met.

By this time your room will look very nice compared to what it did. Little shelves placed above the reach of the smaller children, to serve as cabinets for collections of botanical and other specimens are excellent.

To be sure this is not all. Many *little* things will suggest themselves to your mind for the good work when once begun. I have not spoken before (because I almost considered it unnecessary) of cleanliness. Your stove will be polished, your floor always swept clean, your desks neatly dusted, and stray cobwebs brushed away at all times.

In the work which I have thus rudely sketched you must secure the aid and co-operation of your pupils. They *must* be made to look upon it as their own own.

True teaching consists not in mere text-book recitations, but in developing all the better qualities of human nature; and how much better done when you are setting a constant example of beauty, neatness, and adaptation of means to end before your pupils! "Labor for the beautiful and the good," was the motto of an excellent instructor whom I once knew, and I wish all our teachers were impelled by the same motive.

The children will talk of your work at home you may be sure, and, drawn perhaps by curiosity, the parents will "drop in," and thus you will overcome another drawback to regular attendance. A teacher following this course will leave his mark in the homes and door-yards of his "district" for years. He has not educated the children only, but the fathers and mothers as well. And let me whisper this to you: It pays—pays you financially.

In company with others I was once visiting a very nice little district school-house. Noting the neatness of the room, an old farmer said that they had a nice house, and intended getting teachers who would keep it nice.

Teachers, decorate your rooms; interest your pupils in your work, and children will flock to you, and stay with you.

ONTARIO MODEL SCHOOL.

MIDSUMMER EXAMINATION—1880.

Marks will be deducted in all subjects for carelessness in writing or spelling.

LITERATURE AND GRAMMAR.

FIRST DIVISION—TIME: THREE HOURS.

Values.

15 1. Give a brief sketch of Goldsmith. To whom did he dedicate this Poem? What was his object in writing it?

26 2. Explain the following:—

The young contending as the old surveyed.
Amidst thy bowers the tyrant's hand is seen.
One only master grasps the whole domain.
I still had hopes my latest hours to crown.

What hopes does Goldsmith specify?

The mingling notes came softened from below.

Quote as much as you can of this part of the poem.

To pick her wintry faggot from the thorn.

(i) How is wintry used? (ii) What fig. of Rhetoric?

His pity gave ere charity began.
There the black gibbet glooms beside the way.
Those matted woods where birds forget to sing.
In all the silent manliness of grief.

12 3. What figures of Rhetoric are illustrated by the following:—

When every rood of ground maintained its man.
To husband out life's taper at the close.
While, scourged by famine, from the smiling land, &c.
Do thy fair tribes participate her pain?
Even now, methinks, as pondering here I stand,
I see the rural virtues leave the land.

10. 4. Quote, if you can, either of the similes which Goldsmith uses to illustrate the *hope of his return*, and *the Pastor's efforts to reclaim the fallen.*

Values.

40 5. (1) *(a)* Analyze :—

But times are altered, trade's unfeeling train
Usurp the land, and dispossess the swain ;
Along the lawn, where scattered hamlets *rose*,
Unwieldy *wealth* and cumbrous pomp repose ;
And every want to luxury *allied*,
And every pang that folly pays to pride,
Those gentle hours *that* plenty made to bloom,
Those calm desires that asked but little room,
Those healthful sports that graced the peaceful scene,
Lived in *each* look, and brightened all the green ;
These, *far* departing, seek a kinder shore,
And rural mirth and manners are no more.

(2) Scan lines 2, 5, 8 and 12. What is the metre, and why is it so called ?

(b) Parse the words in italics. How do you explain the concord of 'train' and 'usurp?' What figure of Syntax does it illustrate ? What one is illustrated by "Sweet as the primrose peeps beneath the thorn ?"

Criticise each of the following, and give your reasons :—

He will in no wise cast out whomsoever come to him.
—*Hall.*

Two and two is four and one is five.—*Pope.*
When the motives whence men act are known.—*Beattie.*
This construction sounds harshly.—*Murray.*
A dark and a distant future.—*Chalmers.*
Oh the blackest day for Scotland
That she ever knew before.—*Aytoun.*

Distinguish between the *Definite*, the *Indefinite*, the *Connective*, the *Attributive*, and the *Adverbial* use of the Relative in each of the following :

I met a stranger *who* greatly interested me. That is the man *who* spoke to us. I know *who* did it. He answered the question *which* was quite satisfactory. He struck the dog *which* had never done him any harm.

A little fire is quickly trodden out,
Which, being suffered, rivers cannot quench.
—*Shakespeare.*

SECOND DIVISION—TIME : THREE HOURS.

85 1. *(a)* Analyze, according to proper form, the following :—

A kind of change came in my fate,
My keepers *grew compassionate* ;
I know not *what* had made them so,
They were inured to sights of woe.
But so it was :—my broken chain
With links unfast'ned *did* remain,
And it was *liberty* to stride
Along my cell from side to side,
And up and down, and then *athwart*,
And tread it *over* every part ;
And round the pillars, *one* by one,
Returning where my walk begun.—*Byron.*

25 *(b)* Parse the words in italics (8). *(c)* Classify and conjugate the verbs in the extract, giving your reasons for the classification and the conjugation (17).

15 2. Inflect the *demonstrative* pronouns of the third person, and the present *subjunctive* of the verb 'grow.'

20 3. Write a *complete* sentence which shall contain, besides the main sentence, a compound clause and an absolute phrase.

15 4. *(a)* Give a clear definition of *Mood* and *Tense*. *(b)* How would you explain the three *forms* of each Tense ? *(c)* Give in form of a sentence an example of each.

5 5. Which inflections of the verb depend on the subject ?

5 6. Distinguish between *Root*, *Suffix*, *Prefix*, *Derivative* and *Compound*.

30 7. JUNIORS—Give Etymology of songster, manhood, depth, wooden, foolish, otherwise, withstand, besmear, fugitive, multitude, particle, magnify, prevention, fragile, transportable.

SENIORS—Friendship, farthing, hilly, glazier, withhold, librarian, doctor, captive, contradiction, illegal, malefactor, benediction, postscript, autograph, monarchy, sympathy.

THIRD DIVISION—TIME :—THREE HOURS.

Values.

100 1. *(a)* Analyze, according to proper form, the following :—

Parse the words in italics.

Express in prose the idea embodied in the second stanza.

Far from the madding *crowd's* ignoble strife.
Their sober wishes never learn'd to *stray* ;
Along the *cool* sequester'd vale of life
They *kept* the noiseless tenor of their way.

Yet ev'n these bones from insult to protect,
Some frail memorial still *erected* nigh,
With uncouth rhymes and shapeless sculpture deck'd,
Implores the *passing* tribute of a sigh.

20 2. JUNIORS—Compare the Adjectives that occur in both stanzas.

SENIORS—Assign a reason for the *Case* of each Noun.

20 3. JUNIORS—In what different ways is gender indicated ?

SENIORS—Give at least two different rules for the formation of the plural of nouns.

30 4. Classify the Pronouns, and give a reason for the distinctive name of each class.

15 5. In what way does the subject affect the *voice* of a Verb ?

15 6. Write a complete sentence that shall contain a clause as the adjunct to the word in the Objective Case following a transitive Verb in past tense (indefinite).

ARITHMETIC.

FIRST DIVISION—TIME ; THREE HOURS.

1. JUNIORS.—Extract the square root of 1575.2961.

SENIORS—

Simplify $\sqrt[3]{\frac{135\times256\times375}{40\times108-648}}$

2. JUNIORS.—It is 72 miles from T. to H., and A starts from T. at 6 a.m., and walks at the rate of $3\frac{1}{2}$ miles per hour, and B starts from H. at 6 p.m., and walks 4 miles per hour ; at what point will they meet ?

SENIORS.—At what time will they be fifteen miles apart before meeting ?

3. A owes B $1200, due in 18 months, which B offers to discount in the *ordinary way* at 12% per annum.

JUNIORS.—Determine the amount of *discount*.

SENIORS.—Find what *rate* A makes on his money.

4. If the legal interest be only 6%, what must B put on the face of his note if he borrows $600 from A for $2\frac{1}{2}$ years, so that A may realize 9% for his money ?

JUNIORS.—Calculate at simple interest.

SENIORS.—At compound.

5. Mr. D. instructs his agent to sell $24,300 Montreal Bank stock, and invest the proceeds in Bank of Commerce. If Montreal Bank stock is quoted at 136, and Commerce at 121, and the agent charges $\frac{1}{2}$% for each transaction, how much stock in Bank of Commerce will D. have ?

ADDITIONAL FOR SENIORS.—If the dividends are 10% and 8% respectively, how much per cent. has D. gained or lost ?

6. A. can row *down* from Paris to Brantford in $2\frac{1}{2}$ hours, but it requires $4\frac{1}{2}$ hours to row back. If the stream runs 4 miles an hour, find distance from P. to B. (*Both sections.*)

7. A grocer has sugars at 5c., 6c., 10c., 12c. Find the least number of pounds of each that may be taken to form a mixture worth 8c. per lb.

FOR SENIORS.—If he takes 30 lbs. of the 5c. sugar and has 98 lbs. of the mixture, find the quantities of the others taken ?

8. JUNIORS.—Find the cost of paper required for papering a room 15 ft. high, 30 ft. long, and 18 ft. wide, with paper 28 inches wide and 7 yards in a roll, at 30c. a roll, if $\frac{1}{2}$ an inch has to be trimmed off each side of the paper.

SENIORS.—Find the true rate of exchange between Toronto and London if the ordinary exchange is quoted at $110\frac{1}{2}$. B. owes £1200 in London ; how much will buy a bill of exchange for that amount, if exchange is quoted at $109\frac{1}{2}$?

SECOND DIVISION—TIME: THREE HOURS.

1. JUNIORS—Find cost of 3 tons 18 cwt. coal at $5.37½ per ton.
SENIORS—How many tons, cwts., &c., could be bought for $95.20.

2. JUNIORS AND SENIORS—Divide $340 among A, B, and C, giving A $2 as often as B gets $3, and C $4 as often as B gets $1.

3. JUNIORS—What is the L. C. M. of 13, 17, 26, 34, 52, 68, 156?
SENIORS—Take the additional two numbers, 340 and 364.

4. JUNIORS—If 4 men, or 7 boys, or 10 girls, can do a piece of work in 5 days, how long would it take 2 boys and 2 girls to do it?
SENIORS—How many girls would be required to assist 4 boys to finish it in 3⅔ days?

5. JUNIORS—A man has $304.30½ to give away among some poor boys. If he gives 30½ cents to each, how many will partake of his bounty?
SENIORS—Express ⅜ of a guinea as the decimal of $14.25½.

6. JUNIORS—A cistern has three supply pipes that will fill it in 3, 4 and 5 hours respectively, and two pipes that will empty it in 2 and 6 hours respectively. If all the pipes are opened at the same time, in what time will the cistern be filled?
SENIORS—What sum will pay a debt of $1268.75 which has been at interest for 3 years and 5 months at 7½ per cent.?

7. JUNIORS—How long would it take you to walk from Toronto to Hamilton (40 miles) if you take 10 steps a minute, and each step is 2½ feet.
SENIORS—Find the number of rolls of paper required to paper a room 24 feet long, 16 feet wide and 14 feet high, if the paper is 18 inches wide and has 7 yards in a roll.

8. SENIORS AND JUNIORS—Find the sum of the following numbers, beginning with 45678932, 56789324, and so on, inverting one figure at a time until all are inverted.

THIRD DIVISION—TIME: THREE HOURS.

1. JUNIORS—Simplify $9768-987+8679-4455-5432+8769+9999-7896+45978$.
SENIORS—$13496\times3-768\times9+473\times2\times3-786\div2-430\div5+7869\times7$.

2. JUNIORS—Forty-seven boys combined to have a pic-nic. They purchased 94 oranges at 3c. each; 38 lemons at 2c. each; 4 lbs. sugar at 12c. per lb., and spent $1.58 for cakes. How much had each boy to pay?
SENIORS—If the boys bought ice-cream too, and then each one had to pay 16c., how much was paid for the ice-cream?

3. JUNIORS—A little English boy came to Toronto and he had just £1 1*s.* 4½*d.*, which he changed for our money. How much did he get?
SENIORS—If he got $13.56, how many £ *s.* and *d.* had he?

4. JUNIORS—A man divided $12600 between his son and daughter, giving his son $724 more than his daughter. How much did he get?
SENIORS—If there were two sons and each got $724 more than the daughter, how much did each get?

5. JUNIORS—If you subtract 23 from 352 fifteen times, how many will you have left?
SENIORS—How many times may 27 be subtracted from 3300?

6. JUNIORS—A doctor bought 12 lbs. of medicine and made it up into powders, each having 4 scruples in it. How many powders?
SENIORS—If the medicine cost $2 per lb., and he sold the powders for 5c. each, how much did he gain or lose?

7. JUNIORS—If it is 720 miles from *B* to *A*, and Tom starts from *B* and goes 4 miles an hour, and at the same time Frank starts from *A* and goes 6 miles an hour, how far from *A* will Tom meet Frank?
SENIORS—How far from *A* will they meet on the return journey?

8. JUNIORS—Hanlan won $6000 by rowing 5 miles at Washington. If his shell went 20 feet for every pull, how much did he get for each pull?
SENIORS—What is the smallest sum of money with which I can buy sheep at $5, cows at $22, or horses at $75 each? How many of each can I buy?

MENTAL ARITHMETIC.

FIRST DIVISION—TIME: TWENTY-FIVE MINUTES.

N.B.—*Write nothing but the answer opposite the sign* =.

1. Find result of $3456^2 - 3437^2$. =
2. What number will contain 245 just 245 times? =
3. Toronto ships flour to Montreal with instructions to deduct both commissions and invest proceeds in tea. The commissions are 2 per cent. and 3 per cent. respectively, and amount to $375. Find value of the flour. =
4. A boy has just 5 hours at his disposal. He desires to know how far he may ride at the rate of 8 miles an hour and walk back at the rate of 3, and be in time? =
5. Two men entered into a speculation by which they made $2700. The one put in $4800, the other, $6000. How should the profit be divided? =
6. *A* can do a piece of work in 5 days, *B* can do it in 6, and *C* in 8. How long will it take, if all work together? =
7. How many yards of 27-inch carpet will be required for a room 18 feet wide and 25 feet 6 inches long? =
8. If ⅜ of a yard of cloth cost $\frac{7}{8}$, how much will 1⅞ yds. cost? =

SECOND DIVISION—TIME: TWENTY-FIVE MINUTES.

N.B.—*Write nothing but the answer opposite the sign* =.

1. Multiply 4679 by 25. =
2. Multiply 3456 by 17. =
3. Divide $236 between A and B, giving B. $16 more than A. =
4. $\frac{7}{9}$ of 27 is $\frac{4}{7}$ of what number? =
5. Willie can eat a pie in 3 hours, Tom, in 4 hours, Sam, in 6 hours. How long will it take all of them? =
6. If I pay $2.25 a barrel for apples, how many can be bought for $9.75? =
7. A man gave away ½ of his money and then spent ⅓ of the balance and had $93 left. How much had he at first? =
8. Find the cost of 15 doz. of eggs at 1½*d.* each. =

ALGEBRA.

FIRST DIVISION—TIME: TWO HOURS.

Values.

5 1. Write in words the meaning of the expression $(abc+xyz)^2$.

5 2. Add together $5m+3n+p$, $3(m+n+p)$ and $5p+3n+m$, and obtain the numerical result when $p=\frac{n}{10}=\frac{m}{100}=1$.

5 3. Add together $(a+b)x+(a+c)y$, $(b+c)y$, and $(c-a)x+(b-a)y$.

4. Prove that $c-(a-b)=c-a+b$.

10 5. Simplify $16-\left\{\frac{5}{4}-x-\overline{-\frac{1}{4}\left(3-\frac{x}{2}\right)}\right\}$.

15 6. Prove that $a^4\times a^3=a^7$, and multiply $x^4+2x^3y+4x^2y^2+8xy^3+16y^4$ by $x-2y$.

15 7. Prove that $a^6\div a^2=a^4$, and divide $(x^3-9x^2y+23xy^2-15y^3)$ $(x-7y)$ by $x^2-8xy+7y^2$.

10 8. Resolve the following expressions into factors:—
$81x^4-1$, $(4x+3y)^2-(3x+4y)^2$, $12x^2-14x+2$.

10 9. Solve the following equations:—
(i.) $13x-21(x-3)=10-21(3-x)$.
(ii.) $(2+x)(a-3)=-4-2ax$.

10 10. A and B play together for $5; if A win, he will have thrice as much as B, but if he lose he will have only twice as much. What has each at first?

20 11. Reduce to its lowest terms

$$\frac{y^3-(2a+b)y^2+(2ab+a^2)y-a^2b}{3y^2-(4a+2b)y+2ab+x^2}.$$

10 12. Find the L. C. M. of $4(a^3-ab^2)$, $12(ab^2+b^3)$, $8(a^3-a^2b)$.

10 13. Prove that $\frac{a}{b}\times\frac{c}{d}=\frac{ac}{bd}$.

10 14. Explain fully the method of solving a quadratic equation, and solve

$$\frac{5x}{x+4}-\frac{3x-2}{2x-3}=2.$$

10 15.
$$\left.\begin{aligned} xy&=x+y\\ xz&=2(x+z)\\ yz&=3(y+z)\end{aligned}\right\}$$

GEOGRAPHY.

FIRST DIVISION—TIME :—TWO HOURS.

Values.

15 1. Explain by diagram the occurrence of eclipses, and point out why they do not occur monthly.

15 2. Let us suppose a ship to have been wrecked in the Indian Ocean. If some of the wreck be found on the western coast of Norway, trace the probable course it must have taken to get there.

20 3. (*a*) What are tides? (*b*) Explain their cause, giving the terms used to denote the different conditions of the water? (*c*) Why are there not two tides every twenty-four hours? (*d*) Are there ever four tides on the earth at the same time? (*e*) Why are some "Spring Tides" so very much higher than others?

15 4. Draw an outline map of Asia, and give a general description of its great physical features.

15 5. Name the chief towns and cities along the line of the G. T. R. R., and mention the chief export from each.

10 6. If you desire to establish a trade between Canada and France, what would you take there and what would you bring back?

10 7. Name the ten largest cities of the United States, and state where they are situated.

SECOND DIVISION—TIME : TWO HOURS.

Values.

20 1. Name the chief exports of Canada; tell where they are obtained most abundantly, and to what country these exports are taken.

20 2. What natural features of Asia are on a grand scale? What are the chief exports of Asia, naming the particular part of the country whence they are exported?

20 3. Draw an outline map of South America. Indicate the mountain ranges and the chief rivers, and mark the position of the important cities.

20 4. Going west from Toronto on the G. W. R. R. to Detroit, what towns and cities would be passed, and state the name of the county in which they are situated?

20 5. In going from Toronto to Quebec by water, what places of importance would be passed?

THIRD DIVISION—TIME : TWO HOURS.

Values.

20 1. Name the seas in and about Europe.

20 2. Draw an outline map of North America, and mark the mountain ranges, rivers, and chief cities.

20 3. What are the provinces of Canada? What are the chief productions of each?

20 4. What waters would you sail on in going by water from the western extremity of Lake Superior to Halifax?

20 5. Name the chief towns and cities of Ontario, east of Toronto, and name the county in which each is situated.

HISTORY.

FIRST DIVISION—TIME : TWO HOURS.

Values.

8 1. Give a brief sketch of Titus, Constantine, Alaric and
10 Belisarius.

10 2. Write a short life of Charlemagne.

10 3. Sketch briefly the history of the Third Crusade.

10 4. Give a short account of the establishment of the Turks in Europe.

10 5. Sketch briefly the rise of the Dutch Republic.

10 6. Give the names of the principal battles fought during the Thirty Years' War, introducing dates where you can.

10 7. Name the principal events in the reign of Louis XIV.

10 8. Write a brief life of Charles XII.

10 9. Name, in chronological order, the battles of Napoleon I., introducing dates where you can.

12 10. State the causes of the Crimean War; the principal battles fought, and the commanders on each side.

SECOND DIVISION—TIME : TWO HOURS.

Values.

15 1. State briefly the circumstances by which England and Scotland became united under one Parliament.

15 2. What was the main object of the Treaty of Utrecht, and what were its chief terms?

10 3. Trace the descent of George I. from James I.

10 4. Name the celebrated men in the reigns of George I. and George II.; state for what they were famous, and write a short account of any one of them.

10 5. Give a short account of the rise of British power in India.

10 6. Name the principal battles in the American War of Independence, giving the commanders on each side, and introducing dates where you can.

10 7. Name the most important events in the reign of George IV. and William IV.

10 8. Where are the following places, and for what events in English history are they remarkable: Glencoe, Ramilies, Sheriffmuir, Prestonpans, Trafalgar?

10 9. What do you know of the following persons: Admiral Rooke, Somers, Wilkes, George Stephenson?

THIRD DIVISION—TIME : TWO HOURS.

Values.

5 1. Name the early explorers of Canada.

6 2. State what you know of Frontenac, Marquette and La Salle.

5 3. Describe the taking of Quebec by Wolfe.

5 4. State the terms of the Treaty of Paris.

4 5. Give a brief account of the Battle of Queenston Heights.

4 6. What is meant by *Responsible Government?*

4 7. Give a short account of the Rebellion of 1837.

5 8. Give the date of the Confederation of the Provinces. Name the Provinces added to the Dominion since Confederation.

6 9. Where are the following places, and for what are they noted:—Louisburg, Stony Creek, Chrysler's Farm, Lundy's Lane, Gallows Hill, Ridgeway?

6 10. State what you know of the following persons:—Pontiac, General Hull, Van Ranselaer, Robert Baldwin, Papineau, General Brock.

Notes and News.

ONTARIO.

THE LATE INTERMEDIATE EXAMINATIONS.

In the Markham High School, 16 candidates were sent up, and 11 passed—five in Latin, three in French, and three in Natural Science; two took Second A, four Second B, and five took a Third. This is 25 per cent. of the average attendance of the school.

Two of the pupils of Pembroke High School passed at last Intermediate Examination, one obtaining grade A, and the other an Intermediate.

In Norwood High School, six passed; one in Grade A, three in B, and two in C. There were also nine who passed for Third Class.

In Campbellford High School seven candidates passed, namely, three in Grade B, and four in C.

There were seventeen candidates passed from Clinton High School; one took Grade A, eleven B, and five obtained the Intermediate.

In Waterford High School, seventeen of those sent up for examination passed, as follows: in Grade A, one; in Grade B, seven; in Grade C, nine. One or two more may be added to the list on appeal. In addition to this number, seven passed the examination for third-class teachers.

In St. Catharines Collegiate Institute, no less than fifty-one students passed, 13 in Grade A, 24 in B, and 14 Intermediate. Two former students, who while in the Institute took up first-class work, have also passed, one taking Grade B; besides eight others not immediately in connection, who obtained first-class certificates Grade C.

Ingersoll High School succeeded in passing thirteen candidates, all but one being pupils. Eight took Grade B, and five the Intermediate.

Seventeen successful candidates have been prepared in the Sarnia High School, whose standing is as follows : Grade A, two ; Grade B, eleven ; Grade C, four.

Out of fifteen candidates sent up from Weston High School, eleven passed, namely : one in Grade A, six in Grade B, and four Intermediate.

Picton High School sent up eighteen candidates, of whom one passed in Grade A, five in B, and five the Intermediate.

In Caledonia High School nineteen candidates passed, namely : two in Grade A, twelve in B, and five in Intermediate.

In Niagara High School, one pupil obtained Grade A, and two passed in Grade B.

Gananoque High School passed seven candidates in Intermediate standing.

From Brampton High School twenty-two pupils were sent up, out of whom fourteen passed.

Dunnville High School passed two in Intermediate ; and Cayuga High School one in Grade B.

The Collingwood Collegiate Institute succeeded in passing thirty-six candidates, as follows : fifteen in the B grade, and twenty-one in the C.

Hamilton Collegiate Institute shows thirty-four successful candidates, two A's, nineteen B's, and thirteen C's.

The Dundas Collegiate Institute passed two candidates in Grade B.

In the Kemptville High School one pupil secured a second B at the recent Intermediate examination.

The number of successful candidates from Barrie Collegiate Institute in the Intermediate Examination this year is unusually large. In the examination for Third-class certificates 17 succeeded. In the First-class examination one candidate passed, and in Second-class and Intermediate 27 were successful. On the whole, the exhibit is one of the best in the Province.

In the Farmersville High School fifteen pupils passed at the recent Intermediate Examination as follows :—One in Grade A, nine in Grade B, and five Intermediate standing. To these numbers it is expected more will be added, as there are some appeals.

The Lindsay High Scoool scuceeded in passing fifteen candidates, namely, seven in Grade B, and eight Intermediate.

The Lindsay High School opened well after the vacation with about 100 pupils. They have a very competent staff of teachers, including (besides Mr. W. E. Tilley, Head Master) Mr. Carruthers, Gold Medallist in Classics (Toronto); Mr. Kemy, honor man in Modern Languages (Vic.); and Mr. Seymour, first-class Provincial Grade B and 2nd year man in Toronto University.

Fifteen pupils from the Berlin High School succeeded in passing the last examination. One took Grade A, ten passed in Grade B, and five Intermediate. None of these had passed any previous intermediate examination.

In the Morrisburg High School, one candidate passed in Grade A, two in Grade B, and six obtained the Intermediate.

In Arnprior High School, two candidates passed the recent Intermediate Examination, one gaining a Second B, the other, Grade C.

Eleven candidates from the Stratford High School passed, namely, in Grade B, seven ; Intermediate standing, four.

In the Streetsville High School, three out of five of the pupils passed, two of whom received second-class ; and at the examination for third-class, the school obtained three full certificates with two assistants. The present head master took charge of this school in January, when he found it in a very low state, but the above record plainly shows that he is doing his duty.

From Perth Collegiate Institute twenty of the pupils of the High School were successful in passing the Intermediate examination as follows :—Two in Grade A, eleven in Grade B, and seven Intermediate standing.

St. Mary's Collegiate Institute succeeded in passing twenty candidates at the last Intermediate Examination, as follows : four in Grade A, six in Grade B, and ten Intermediate. They were all pupils of that Institute, and none of them had passed the Intermediate examination before.

Rev. S. D. Rice, D.D., Manitoba, has been appointed a member of the Board of Education, in the place of the Rev. J. F. German, who has recently moved to Picton, Ont.

The average attendance of the Waterdown High School for the first half of 1880, has been 87.

In the Uxbridge High School two pupils wholly prepared at the school passed the entrance examination before the Medical Council, last March. Two young ladies matriculated in Arts in Toronto University, each taking honors in Mathematics, English and French. Thirteen have passed the last Intermediate Examination, only two getting a lower grade than B, and eleven obtained Third Class County certificates.

The vacancy in the Barrie Collegiate Institute staff, caused by the resignation of Mr. Blackstock, in order to attend College, has been filled by the appointment of Mr. P. T. Lafleur, B.A., of McGill College, Montreal. Mr. Lafleur's record is a brilliant one, and he will doubtless be a great acquisition to the school. In addition to being an excellent classic, he is gold medallist in modern languages, and speaks and writes the French language as readily as English.

Mr. Wm. McBride, B.A., Toronto, formerly assistant teacher Goderich High School, and recently of London University College (England), has been appointed Head Master of Newcastle High School.

Mr. W. H. Graham, B.A., late assistant master at Dunnville High School, has been added to the staff of St. Catharines Collegiate Institute.

Mr. J. W. Reid, ex-scholar of the 1st and 2nd year, University of Toronto, has been appointed to the vacant Assistant Mastership of the High School, Weston.

Dr. May recently inspected the Niagara Mechanics' Institute Library, which had just undergone a thorough re-classification. It contains 2,600 volumes. This institute, we are glad to learn, is in a very flourishing condition.

Mr. Edward A. Stevens has been appointed Principal of Renfrew Model School.

Mr. R. P. Echlin, B.A. (Vic.), Head Master of the Caledonia High School, has resigned his position to commence the study of law in St. Catharines, and has been succeeded by Mr. Joseph Morgan, B.A. (Tor.), late first assistant Seaforth High School.

Mr. L. Harstone, B.A. (Tor.), has been appointed to the first assistantship vacated in Seaforth High School by Mr. Joseph Morgan, B.A.

Two pupils of the public school taught by Miss Dalton in Haldimand Co., succeeded in passing at the late Intermediate examination, each obtaining a B.

In the Waterdown High School the average attendance for first half of this year was 87. In addition to the number who passed the Intermediate examination, 7 passed the examination prescribed for third-class teachers.

At a late meeting of the Parkdale School Board, Mr. Clark said it was the intention, when some adjacent ground was purchased, to plant a large number of flowers labelled with the common and botanical names, as a means of educating the children in practical botany. The Board were agreeable that the plan should be carried out next year.

NOVA SCOTIA.

The first meeting of the Provincial Educational Association of Nova Scotia, organized under Regulation of the Council of Public Institution, was held at the Normal School, Truro, on the 14th and 15th of July, under the *ex officio* presidency of the Superintendent of Education. The attendance was large and representative. The enrolled membership embraced 174 names. Besides the representation of teachers from almost every county in the Province, there were present, actively participating in the work of the Association, the Rev. Dr. Hin, Chancellor of the University of Halifax ; the Very Rev. Dr. Ross, Principal of Dalhousie College ; the Rev. Dr. Sawyer, President of Acadia College, Rev. Mr. Dodwell and Prof. Higgins, principal examiners, the faculty of the Normal School, and a large number of the Provincial Inspectors of Schools. Alex. McKay, Esq., Principal of the High School, Dartmouth, was elected Secretary, and Burgess McKittrick Esq., B.A., Principal of the County Academy, Sydney, Assistant-Secretary. The Executive Committee of the Association, possessing important *ad interim* powers, was constituted as follows, the method of election being by nomination and ballot : Hinkle Congdon, Inspector District No. 1 ; Professor Eaton, of the Normal School ; A. H. McKay, Principal of the Picton Academy ; A. McKay (Secretary) ; C. A. Roscoe, Inspector District No. 5 ; Miss Hamilton (Halifax) ; Miss Newcomb (Cornwallis). The Superintendent of Education and the Principal of the Normal School are, by Regulation, members of this Committee.

The pupil-teachers of the Normal School, and a large number of ladies and gentlemen interested in the cause of education, were present at the various sessions of the Association.

The programme embraced chiefly the discussion and illustration of practical professional work, or of the principles which should

direct it. But little time was spent in discussing points of order or in displays of pretentious oratory.

First Session.—After a few words of explanation and welcome by the President, the Association retired to the practice room of the Normal School to witness a lesson in reading conducted by Miss Russel, of the Model School. The lesson was designed to illustrate the phonic method of teaching reading, and elicited an interesting discussion, participated in by Dr. Ross, Principal Calkin, Inspector Patillo, the President, Mr. Parker of Port Hastings, and others. The more formal exercise of this session was the presentation of a paper on "A Course of Study for the Public Schools" by A. H. McKay, Esq., Principal of Picton Academy. An outline course was submitted for inspection, and discussion thereon was fixed for a subsequent session. Mr. McKay's paper presented with great clearness the principles which should guide in the selection of studies. The Conspectus furnished aims at being suggestive and tentative, rather than complete and final. It makes four groups of studies : *Calisthenics*, *Language*, *Mathematics*, *History* ; and contemplates four Common School grades, and four High School grades.

Second Session.—The first exercise of this session was an excellent essay by Principal Calkin, on "The Observing Powers." This important subject was discussed in a philosophical manner. The true aim of education is the harmonious development of all those faculties which unitedly constitute our ideal of a perfect man, and the office of the teacher is so to direct the inherent spontaneous forces and activities of the child's nature, as that his development shall be natural,—shall be an historical epitome of the development of the higher races of man. The material for the formation of thought is largely furnished through the senses. The accuracy, force, and range of our intellectual work depend on the correctness and clearness of the impressions made upon the senses. Their careful training, therefore, according to psychological principles, is of the first importance. The paper contained many practical suggestions as to how this could be effected. These principles were illustrated by a lesson in drawing, conducted by Miss Smith, of the Normal School, herself an accomplished artist ; and by an inimitable lesson in botany, by Miss Mary Hamilton, of the Model School. The Association then proceeded, according to pre-arrangement, to consider the "course of study" introduced and outlined by Mr. McKay. Pertinent questions were asked by Dr. Ross, which gave the author of the course further opportunity to explain the principles according to which it was framed. Inspector Congdon correctly interpreted the feeling of the Association when he referred in grateful terms to the obligations under which all had been placed by Mr. McKay's labors. Mr. A. G. Parsons, while criticising the course on some points of detail, was in hearty sympathy with its general scope and spirit. He hoped that by proper development it might be made the means of a thorough re-organization of our high school work.

Third Session.—This session took the form of a public educational meeting in the Y. M. C. A. Hall. His Honor the Lieutenant-Governor presided. Speeches were delivered by His Honor the Superintendent of Education, Rev. Chanceller Hill, very Rev. Principal Ross, Rev. President Lawyer, and Professor Higgins. The meeting may be characterized as one of the most successful of the kind ever held in the Province.

Fourth Session.—U. D. McKenzie, Inspector District No. 10, gave a thoughtful address, listened to with great interest on account of its important practical suggestions, on "School Hygeine." The relation between healthful intellectual activity and proper physical conditions was lucidly discussed, ventilation, light, cleanliness, school-building sites, precautionary sanitary measures and similar points were lucidly touched on. Mr. McKay of Picton, Inspector Congdon and others followed with pertinent remarks and suggestions.

E. H. Owen, Esq., Principal of the Lunenburg Academy, read an instructive paper on Methods of Teaching History by outlines and diagrams. Mr. Owen supplemented his remarks by presenting an original and ingenious chart, used with great success in his own school. An interchange of views followed, engaged in by Messrs. Calkin, Parker, Parsons, Elliott, Patillo, Congdon, and McKay.

Fifth Session.—Rev. Geo. U. Hill, A.M., D.C.L., Chancellor of the University of Halifax, addressed the Association on a subject which may be epitomized as the proper correlation of studies followed by a brief sketch of the history of education in Nova Scotia, and a statement of our present educational needs. The address was most eloquent and practical, and was referred to in terms of warm appreciation by those who spoke in response to its suggestions. The lesson deduced by the President from the interesting and profitable discussion thus originated, was that the true aim before us is to make our country as well educated as other countries, especially as those with which she comes into either commercial or intellectual competition.

The discussion of the proposed "Conspectus of a course of study for the Public School," was resumed and carried on at considerable length. Ultimately the following special committee was appointed to confer with the Superintendent of Education in elaborating the outline for presentation at next session : Principal Calkin, Mr. McKay (Picton), Inspectors McDonald and Patillo, and Professor Higgins.

A motion regarding text-books was briefly discussed, and the Association, after customary formal procedure, adjourned.

NEW BRUNSWICK.

The public schools throughout the Province re-opened on the 23rd of August.

Mr. Jas. Fowler, M.A., Instructor in Natural Science in the Provincial Normal School, is about to remove to Kingston, Ont., where he takes the position of Lecturer in Natural Science and Librarian at Queen's College. As a practical botanist, Mr. Fowler is widely known on both sides of the Atlantic, and has laid this Province under obligations to him by many valuable contributions to the knowledge of its *flora*. His removal will be regretted by many who have enjoyed his friendship and his instructions.

The fourth department (Grades VII. and VIII.) of the Model Schools at Fredericton has been placed in charge of Mr. James Vroom, of St. Stephen, in the room of Mr. R. S. Nicolson.

Before this number of the JOURNAL reaches its readers, three of the County Teachers' Institutes will have held their annual meetings, viz. : Albert County, at Harvey; Restigouche County, at River Charles ; and Sunbury County, at Oromocto, all on the 2nd and 3rd of September.

The Gloucester County Institute is to meet at Bathurst on the 23rd and 24th of September, and that of Northumberland County at Chatham on the 7th and 8th of October.

The fourth annual meeting of the Educational Institute of N.B., referred to in our "Notes" last month, in some respects surpassed all previous meetings in interest and profit. A most favorable impression seems to have been made upon the public mind by the ability, earnestness and freedom that characterized the discussions, which were somewhat fully reported for the St. John press. Immediately after the formal opening of the Institute, on the evening of July 13th, Dr. Rand delivered a public address, the chief topics of which were (1) the spirit that should prompt and govern the educator, and (2) a plea for secondary education. This was an able effort, and, to quote from the press report, "was received with loud applause and warm encomiums from all who listened to it."

Mr. Principal Crocket, of the Normal School, was called upon to take a very prominent part in the proceedings of this Institute, which must have entailed an immense amount of self-sacrificing labor upon him. In the first place, as Chairman of the Committee on a Course of Instruction for High Schools, he had drawn up most carefully a detailed curriculum extending over four years of High School work, and adapted to the various conditions of towns and county districts. Printed copies of this were placed in the hands of the members of the Institute, and Mr. Crocket explained at length the general principles and leading features of the course. Then, again, on the third day of the meeting, Mr. Crocket read two very instructive and suggestive papers, the first under the title, "The Kindergarten—Does the system differ from the principles of modern education?" and the second on the Method of Instruction in the subjects of Minerals, Animal Life, and Plant Life required by the standards of the existing course. The latter was restricted, for want of time, mainly to illustrations of lessons on Animal Life.

On the same day (at the sixth session) a subject of much practical importance was brought before the Institute by Mr. Inspector Oakes, in an admirable paper followed by a variety of experiments. The subject was, "How the Instruction in Physics required by the Standard of the Course may be given in Schools without Expensive Apparatus." At the last session of the Institute, on the Thursday evening, a lecture was delivered by Dr. Bailey, of the Provincial University, in presence of a large audience. His subject, "Phases of Matter," was supplementary to that presented by him before the Institute in 1878, "Forms of Energy." The lecture was illustrated by a large number of striking experiments, for which elaborate preparation had been made, and which were very successfully performed by the professor, assisted by Mr. John Babbitt.

Two entire sessions on the second day were devoted to the discussion of the existing course of instruction for primary and advanced schools and the proposed "Course of Instruction for High Schools and High School Classes." All the speakers, with one or two exceptions, appeared to think it well that a course was prescribed. Several expressed the highest approval of the course as a whole, but pointed out certain changes which they thought might be made with advantage. Instead of a general opposition to the prescribed course, which some of the newspapers alleged to exist among the teachers, instead of the alleged restiveness under "needless restrictions and cramping regulations, a listener to these debates must have been struck with the fact that many speakers held the curriculum to be not sufficiently definite. So far from clamoring for greater freedom in the choice and arrangement of subjects, they wanted more definiteness in some of the details. It was held by some of the teachers that the course was too advanced for the country schools, and that it required too much ground to be gone over in a given time. The following gentlemen took part in the discussion: J. A. Freeze, of St. Stephen; John March (secretary to trustees), of St. John; Daniel Morrison, of St. John; John Montgomery, of Carleton; Arthur L. Belyea, of Mangerville; George S. Inch, of Milltown; W. H. Parlee, of Portland; J. M. Coyngrahame, of Fairville; A. J. Denton, of Shediac; W. P. Dole, (Inspector), of Fredericton; H. C. Creed, of Fredericton; H. S. Bridges, of St. John; G. H. Raymond, of Sussex; Dr. Rand, E. Mullin (Inspector), of Fredericton; and Mr. Principal Crocket. In the evening Mr. Crocket closed the debate, and moved the following resolutions, which were adopted after brief discussion:

Resolved—That in pursuance of the resolution adopted in 1878 and re-affirmed in 1879, in favor of secondary education, due provision should be made for the same in our school system, and that definite pecuniary grants should be made by the Legislature. (2.) That in view of the insufficiency of time at this meeting for the full and satisfactory discussion of the proposed course for High School classes, it be laid over till next session and published meanwhile.

The evening session was occupied mainly in discussing the existing regulations relating to inspection and ranking of schools. Messrs. Montgomery, Belyea, Wilbur, Conygrahame, Parlee, Raymond, March, Denton, H. Town of St. John, Jas. R. Mace of Fredericton, E. T. Miller of Canterbury, W. M. McLean of St. John, Jas. Vroom and Jas. D. Lawson of St. Stephen, and Dr. Rand addressed the Institute upon the subject. The regulations were criticised very freely—strongly condemned by some and approved by others. Many questions asked by teachers were satisfactorily answered by the Chief Superintendent. Difficulties were cleared up, and such opposition as has existed was found to be due more to circumstances connected with the inception of the new system than to the principle of the system itself.

At the fourth session, a committee consisting of about sixteen ladies and gentlemen was appointed to take into consideration such suggestions as might be made in reference to the course of instruction, and to report to the Institute such recommendations as they think proper. This committee, after much labor, presented a report recommending a number of alterations in details of the course in certain subjects, but leaving the course as a whole untouched. After the conclusion of Professor Bailey's lecture at the closing session, the report was thoroughly discussed; portions of it were adopted, others amended or rejected, and a large part referred to the judgment of the Chief Superintendent and the Inspectors.

In accordance with a resolution adopted by the Institute in 1879, a committee was appointed subsequent to the last annual meeting, for the purpose of preparing a report on "The Promotion of Pupils in Graded Schools." This committee reported, through its chairman, Mr. D. McIntyre, of Portland, recommending that it is not advisable that a fixed formula for the grading of schools should be prescribed for all sections of the Province, but that the times and methods of carrying on this work can be satisfactorily arranged, and the interests of the schools be best served by leaving the question in the hands of the Boards of Trustees of the respective school districts. The report was adopted. Mr. March, on behalf of the teachers and trustees of St. John, invited the Institute to meet in that city next summer in the hall of the Victoria School. He assured the members of a cordial welcome, and said that arrangements would be made to provide accommodation for teachers who should come from a distance. A resolution was passed accepting the invitation, and requesting the Chief Superintendent to convene the next meeting of the Institute in St. John.

Toward the close of the meeting, a resolution was introduced by Mr. Wilbur, with the concurrence of the Executive Committee, requesting the Chief Superintendent "to report to the Board of Education the desirability of having some recognized mode whereby the opinions of practical teachers on the choice of text-books may be from time to time formally submitted to the Board for consideration." After remarks by the mover, Messrs. Crocket, Coyngrahame and Creed, Dr. Jack and Dr. Rand, the resolution was carried.

The Institute was favored with excellent music by a choir under the direction of Prof. E. Chadwallder, organist. Among the visitors present during the meeting were the Attorney-General, Provincial Secretary, and other members of the Local Government, Judge Fisher, Judge Steadman, and several clergymen.

QUEBEC.

The midsummer holidays are now drawing to a close, and the papers are filled with advertisements of the opening of schools and academies, and educational institutions of all sorts, public and private. The teachers are, no doubt, returning with renewed health and vigour to their arduous, important, and often ill-requited labours. As a class there is none more faithful and devoted than the great body of instructors of youth throughout our land, nor is there any profession whose labors and devotion are less appreciated and more poorly remunerated, or in which the prizes even for the most faithful and talented are fewer and of less value. It is certainly not to be wondered at that so few are found to take to teaching as a profession, and so many make it merely a stepping-stone to other professions, such as law, medicine, &c., which are at once more remunerative, more respected, and secure the entrée to a higher social position. Will the profession of teacher—one that draws so largely on the energies of those engaged in it—that requires for its successful prosecution so much tact, patience, and enthusiasm—ever hold that place in public estimation that its paramount importance demands? Money is more liberally and less grudgingly spent on almost any other project than for the promotion of education. To what better end could men of wealth devote a portion of their means than to the promotion and encouragement not of superior education merely in our academies, colleges and universities, but of elementary instruction in our common schools, by augmenting the salaries of successful teachers in the new and poorer municipalities? This want is not felt so much in Ontario, where you have a national or rather provincial system of education open to teachers of all creeds, as in the Province of Quebec, where the Council of Public Instruction is divided into two committees, one Roman Catholic and the other Protestant. Here there is no provincial system of instruction with schools open to teachers of any religious belief. The Protestants, being few in number, and scattered in small groups over the Province, experience no little difficulty in maintaining schools, especially in the poorer country districts; and as the Government grants are made not according to the taxes paid by Roman Catholics and Protestants respectively, but according to population, the latter, it is contended, pay largely and receive comparatively little of the public moneys for education. The Protestants labour under some disadvantage also in regard to the taxes levied for educational purposes from corporations and joint-stock companies. Altogether it is extremely difficult for the Protestant Committee of the Council of Public Instruction, with the very limited means at their disposal, to remunerate the teachers as their services deserve, or even to secure always a Protestant instructor, where the great majority of the settlers are of that faith. It is greatly to be desired that men of wealth, having at heart the value and importance of Protestant education in this Province, should come to the aid of the Protestant Committee of the Council of Public Instruction, within whose "exclusive jurisdiction everything relating to Protestant schools and public instruction of Protestants" is vested by law. Said Protestant committee "may receive by donation, legacy or otherwise, *à titre gratuit*, money or other property, and may dispose of the same in its discretion for the purposes of instruction, and shall possess, in respect of property so acquired, all the powers of a body politic and corporate."

To convey some idea of the miserably small salaries of some of the teachers in this Province, let the following quotation from the report of one of the Inspectors suffice: "I have 97 female teachers, and the magnificent number of one male teacher in 20 municipalities. Seventy-six female teachers receive from $64 to $72 salary; twenty-one a little over $100." The foregoing extract is from the report of one of the French Inspectors, Mr. Beland.

Mr. James Mitchell, Rector of the High School, Quebec, has resigned his office in that institution.

The Faculties of Arts and Applied Science of McGill College, Montreal, meet on the 15th of September. On the 16th, 17th, 20th and 21st of the same month, Matriculation Examinations, and Exhibition-Scholarship Examinations in Classics, Mathematics, Mental and Moral Philosophy, Modern Languages and Natural Science, will be held, and on the 22nd the Lectures in Arts and Applied Science begin. For first year's students three exhibitions are offered, two of $125 and one of $100. For second year's students two exhibitions are offered, one of $125 and one of $100. For third year's students three scholarships of $125 yearly are offered. A scholarship is tenable for *two* years, an exhibition for *one* year. By reference to the McGill College and University Calendar the subjects of competition for these scholarships and exhibitions may be ascertained, as well as all other information in regard to the Faculties and Courses of Study therein.

On the 6th of October next the Protestant Committee of the Council of Public Instruction will meet for the distribution of the Fund for Superior Education, and the consideration of other matters connected with the Protestant Education of the Province.

MANITOBA.

The examination of teachers for the Protestant Public School of the Province has just taken place. The following are the names of the candidates :

For first-class certificate, T. S. Menarey; for second-class, Miss M. Irwin, C. Martin, John Kelly, J. A. Palmer, L. Galbraith, J. A. Ingram, M. Shore, W. A. Barington, A. H. Monkman, Miss Aggie Eyres, Miss Sarah Eyres, R. Shore, Edward A. Ganatt, F. Shore, Miss L. Mallory, Miss Barber, Miss S. Roblin, Miss A. Simpson, Miss B. Merritt, A. Beamerman.

For third-class.—H. A. Stewart, Miss M. Gerrond, Miss J. A. Patterson, Miss L. Aikenhead, F. H. Feethan, John W. Daly, Wm. Graham, Miss C. Robinson, Thomas M. Barington, John Livingstone, Richard Lepsett, Miss A. Edwards, Miss Burritt, A. L McIntosh, A. A. Stock, Miss S. York, Miss A. York, Miss Fulsher, John B. Adams, Miss McLaughlin, M. G. Abey, Miss Evans, Miss J. C. Ross, Miss Florence Burke, W. McMullen, Miss M. Patterson.

The regular quarterly meeting of the Protestant section of the Board of Education was held on the first Wednesday in August, amongst other matters the meeting adopted the following resolution, viz :

That Stewart Mulvey, Lieut. Col. Kennedy and the Superintendent, be a Committee to report upon the propriety of authorizing a suitable instrument for the infliction of corporal punishment in the public schools.

The new South Ward school-house for Winnipeg, a very fine two storey brick veneer building, will soon be ready for use.

St. Johns College School re-opened on 6th inst. The attendance is unusually large.

Manitoba College will re-open on 7th September.

Readings and Recitations.

THE SCHOOL TEACHER'S SOLILOQUY.

BY A SCHOOL MA'AM.

To teach, or not to teach, that is the question :
Whether 'tis better in the school to suffer
The noise and bother of four dozen youngsters,
Or to take up arms against a sea of troubles,
And, by marrying, end them ? to love—to marry
No more ; and by marrying to say we end
The heart-ache, and thousand petty troubles
That teachers are heir to ;—'tis a consummation
Devoutly to be wished ; to love—to marry ;—
To marry ! perchance to be miserable ; ay, there's the rub ;
For in that state of wedlock what troubles may come,
When we have shuffled off our happy girlhood
Must give us pause ; there's the respect,
That makes teaching of so long life ;
For who would bear the anxieties of examinations,
The scorn of Model school teachers, the carelessness of trustees,
The weariness of mind and body, the criticism of inspectors,
The insolence of children, and the care
That patient teachers with unworthy pupils take,
When they themselves might their quietus make
By simply marrying? Who would all this bear,
And grunt and sweat under a weary life,
But that the dread of misery after marriage,
That untried state, into which, if you once enter,
You can never return, puzzles the girls,
And makes them rather bear the ills they have,
Than fly to others that they know not of !

BABY HAS GONE TO SCHOOL.

The baby has gone to school ; ah, me !
What will the mother do,
With never a call to button or pin,
Or tie a little shoe ?
How can she keep herself busy all day
With the little hindering thing away ?

Another basket to fill with lunch,
Another " good-by " to say ;
And the mother stands at the door to see
Her baby march away,
And turns with a sigh that is half relief,
And half a something akin to grief.

She thinks of a possible future morn,
When the children, one by one,
Will go from their home out in the world
To battle with life alone ;
And not even the baby be left to cheer
The desolate home of that future year.

She picks up garments here and there,
Thrown down in careless haste,
And tries to think how it would seem
If nothing were displaced.
If the house were always as still as this,
How could she bear the loneliness ?

REVIEWS.

THE PHILIPPICS OF DEMOSTHENES. Edited by Frank B. Tarbell, Ph.D., Yale College. Pp. xxxviii. and 100, 8vo. Boston : Ginn & Heath.

THE LIFE OF AGRICOLA. By P. Cornelius Tacitus. Edited by William Francis Allen, A.M., Professor in the University of Wisconsin. Pp. vi. and 64, 8vo. Boston : Ginn & Heath.

These works are creditable alike to the publishers and the editors. The texts are edited with judgment, and the notes are good, and indicate thorough scholarship on the part of their writers. The introduction which Dr. Tarbell has prefixed to the Philippics is calculated to be very useful to the student. It gives in a concise and clear form the information about the history, the constitution, the finances, the army and the navy of Athens, necessary for an intelligent perusal of the text. In many respects this edition of these famous orations is superior to every other commonly used in the country.

INTRODUCTION TO LATIN COMPOSITION. Revised and enlarged. With introductory exercises on Elementary Constructions. By William F. Allen, Professor in the University of Wisconsin. Pp. vii. and 181 to 800. Boston : Ginn & Heath, 1880.

This book is another proof of the steady progress which our cousins on the south side of the Great Lakes are making. Not only is it a creditable specimen of the printer's art, but it is also scholarly and practical. By means of the system of references employed, it may be used with either Allen and Greenough's, Gildersleeve's, or Harkness's Latin Grammar. The exercises are well graded, and neither too easy nor too difficult. We advise teachers to examine it carefully before adopting any other text-book on the subject.

NEW AND COMPLETE ENGLISH-GERMAN AND GERMAN-ENGLISH POCKET DICTIONARY. With the Pronunciation of both Languages, Enriched with the Technical Terms of the Arts and Sciences. For the use of Business Men and Schools. By Dr. J. F. Leonhart Tafel and Louis H. Tafel, A.B. Fifth edition. Pp. 874, 12mo. Philadelphia: J. Kohler, 1879.

After testing this dictionary by turning up a number of words in both parts, we have come to the conclusion that it is a trustworthy and valu-

able work, calculated to be serviceable to both English and Germans. The difficulties of the task of indicating the pronunciation of the words of one language by translation into another have been confronted by the authors with a considerable measure of success. The book is well bound and not bulky. We recommend it to those of our readers who are in want of a handy work of the kind.

EDUCATION. *By Herbert Spencer.* Messrs. J. Fitzgerald & Co., 294 Broadway, New York, have commenced the issue of what they call the "Humboldt Library." They propose to issue 24 volumes in a year, to comprise popular expositions in Science. These volumes will be cheap reprints of books not copyrighted in the United States. The price of each will be 15 cents, or 3 dollars for the 24 numbers. The fifth number contains Herbert Spencer's Intellectual, Moral, and Physical Education.

SPIRITUAL SONGS FOR THE SUNDAY-SCHOOL. New York: Scribner & Co. 50c.; sample copy, 25c. Rev. Charles Robinson, D.D. has previously issued two of the most popular music books published in America: *Spiritual Songs for the Church and Choir*, and *Spiritual Songs for Social Worship*. With the assistance of Prof. W. F. Sherwin, whose musical skill and long experience in practical Sunday-school work has rendered his help of the greatest value, he has compiled the third volume of the "Spiritual Songs Series,"—"*Spiritual Songs for the Sunday School*,"—and blended the three phases of church worship in one, by the common intermingling of their hymns of praise. The frivolous character of Sunday-school hymns and tunes has been a standing reproach for years. In the new book, Rossini, Handel, Mozart, Beethoven, Chopin, Flotow, Sullivan, Oberthur and the best of modern American composers have been drawn on, and the result is a collection of rich tunes allied to worthy hymns, which has never been equalled among books designed for Sunday-school use. The general appearance of the volume—the handsome red cloth binding, the tinted paper and square page—harmonizes well with the delightful interior.

SCHOOL MANAGEMENT AND METHOD. *By John J. Prince. Publisher, John Heywood, 18 Paternoster Square, London.* This is one of the most practical of the works recently issued in England for the use of young teachers. It is specially adapted for enabling young teachers to pass their professional examinations. A feature of the book is the portion devoted to giving answers to examination questions on method which have been set by the Departmental Examiners.

PRACTICAL LESSONS IN ENGLISH. *By J. M. Sill, A.M., Superintendent of Schools, Detroit, Mich. A. S. Barnes & Co., New York and Chicago.* The author claims to have given a statement of the principles of English Grammar and Composition without including the "non-essentials." The arrangement, the classification, and many of the methods of presenting the subject, will be found to be new and good. The verb is treated simply and clearly. Many common fog-banks are avoided. The mechanical execution of the work is unusually excellent.

LEARNING AND HEALTH. *By Benjamin Ward Richardson. C. W. Bardeen, Syracuse. 15c.* This is No. 5 of the School-room Classics. Among much that is extravagantly nonsensical, it is a treat to read a sensible essay on brain pressure in *early education*. It is indeed a strong but temperate statement of the evil effects of doing too much work with the brain, while the body is being neglected.

THE FAULTS OF SPEECH. *By Alexander Melville Bell. Thos. Henderson, Brantford, Ont. 30c.* It is astounding how many teachers act as though they were performing their duty to their pupils while they allow them to complete their school course addicted to many serious errors in uttering their words. How any teacher can allow a pupil to continue stammering, lisping, thickness of utterance, &c., is incomprehensible on any other theory but acknowledged incompetence. Many a man's prospects in life are blighted on account of some fault of speech which his teacher should have removed. Mr. Bell can show how to do this better than any man living.

MAGAZINES.

THE ATLANTIC MONTHLY for September contains two articles of special interest to teachers: "Oxford and Cambridge," by Richard Grant White, and a review of Mr. White's "Words and their Uses and Every-day English." Among the other reviews we may direct attention to that of "Goldwin Smith's Cowper." "The Stillwater Tragedy," a novel of a high order of excellence, by Mr. Aldrich, is completed. Mark Twain furnishes "Mrs. McWilliams and the Lightning." The student of politics will be interested by the articles on "The Political Responsibility of the Individual," and the "Progress of the Presidential Canvass." The other contents are: "Two-score and Ten," by J. S. Trowbridge; "Sir Walter Scott," by Thomas Sergeant Parry; "The Perpetuity of Song," by James S. Fields; "Au Serieux," by Ellen W. Olney; "Unaware," by Maurice Thompson; "Intimate Life of a Noble German Family, Part I.; "Women in Organizations," by Kate Gannett Wells; "Each Side the Bridge, a Dutch Painting," by Alfred B. Street; "Reminiscences of Washington, VI., The Harrison Administration, 1841;" "West Wind," by Celia Thaxter; "Such Stuff as Dreams are made of," "Music," "Recent American Fiction." "The Contributor's Club." The number more than sustains the reputation of the magazine for literary excellence.

THE GENTLEMAN'S MAGAZINE for August contains another instalment of "Queen Cophetua," a serial story of a piquant and original character; "A Perished Kernel," which is a very readable account of the trial of the Earl and Countess of Somerset for the murder of Sir Thomas Overbury in the reign of James I.; "The Moon and its Folk-Lore," an entertaining and instructive article; "Rachel Felix," a sketch of the life of a famous actress; "From Cremorne to Westminster," an interesting article on some of the sights of London; "The Czarina Anne;" "In the City of the Saints," an account of a visit to Salt Lake City by Iza Duffus Hardy; "Parliament and the Press; "Table Talk." On the whole, a varied, valuable and attractive number.

LITTLE FOLKS' READER. D. Lothrop & Co., Boston, Mass. This little periodical, which is devoted to the delectation of the juveniles, is, as usual, attractive and entertaining. The letter-press is suitable, and the illustrations are neatly engraved and humorous, as well as instructive. "Dot, the Dentist,"—a sagacious looking monkey—appears to be the "hero" of the August number, and his rueful visage distorted with pain is well delineated.

THE PRIMITIVE METHODIST MAGAZINE for Aug. 1880 is well stored with useful matter. It deserves a reading beyond the bounds of the denomination to which it belongs. The table of contents indicates a word in season for all classes of readers. We especially commend the brief readings for "Sunday at Home" to all who cannot attend the sanctuary.

The September number of the *Popular Science Monthly* possesses unusual interest to teachers. The paper by Sir Auberon Herbert, is an independent inquiry into the influence of "State Education," and is devoted to the question whether it is "A Help or Hindrance?" From being a blind admirer of the system, he has been led by careful study to doubt the enormous benefits ascribed to it, and he points out its drawbacks with great force. Even the friends of State education will do well to ponder seriously this writer's reasoning We have another curious paper on those besotted mediæval superstitions which seem absolutely incredible to modern readers—it is on the "Legal Prosecutions of Animals." Animals were assumed to be responsible for acts like people, and horses, hogs, bulls, rats, and even insects, were solemnly prosecuted, and the whole judicial apparatus of society was brought to bear upon their trials and executions "Psychogenesis in the Human Infant," by Professor Preyer, of Jena, is the ablest essay that has yet appeared on mental development in infancy The paper contains many new observations on the mental progress of infants, and all sensible mothers who read it will find a new charm in watching the psychical growth of the wonderful little beings that are confided to their charge. It is high time that the women began to look into this subject for themselves. "The English Precursors of Newton," from the "Edinburgh Review," is the first instalment of a most interesting chapter in scientific history. Alice Hyneman Rhine writes on "Night-Schools in New York and Paris." The editor discusses "Sewage in College Education," and raps some of these institutions vigorously for their devotion to Latin and Greek, and their neglect of the sciences upon which health and life depend. There is unusual fulness in the miscellaneous departments. New York: D. Appleton & Co.

The September number of the *North American Review* contains seven articles. The first is the initial paper by M. Charnay on "The Ruins of Central America." This article is illustrated from photographs, which aid materially in the study of the text. An expedition under the auspices of the French and American Governments, of which M. Charnay is in charge, is now operating in Central America, and the explorations are likely to create an interest more profound, and to be attended with more valuable archæological results, even than came from the researches of Champollion in Egypt. They promise a new chapter in American history that shall establish the origin of the remarkable race of which nothing but splendid ruins were left when Columbus discovered the new world. Following this article is one on "The Perpetuity of Chinese Institutions," from the pen of S. Wells Williams. The writer has been a resident in China for many years, and is thoroughly conversant with the language-institutions, and social conditions which he discusses Gen. John W. Clampitt, the surviving member of Mrs. Surratt's counsel, writes upon "The Trial of Mrs. Surratt." The author sincerely believes that Mrs. Surratt was innocent of the crime for which she suffered death, and expresses himself feelingly. "The Personality of God" is treated by the metaphysical writer, W. T. Harris. R. B. Forbes gives some valuable suggestions in reference to steamboat disasters. The Rev. Edward Everett Hale follows with a paper upon "Insincerity, in the Pulpit," that will hardly fail to draw some protests from his brother clergymen. The number closes with a review of several recent works on the Brain and Nerves, by Dr. George M. Beard.

LITTELL'S LIVING AGE.—The numbers of *The Living Age* for the weeks ending July 10th and 17th respectively, contain the following articles: The Development of Buddhism in India, *Fortnightly;* Suicide, and the Reconstruction of Sheepfolds, *Blackwood;* What Shakespeare Learnt at School, and Diamonds, Natural and Artificial, *Fraser;* A Learned Lady of the Sixteenth Century, and The Sculptures on the Facade of St. Mark's, Venice, *Macmillan;* Henry David Thoreau, his Character and Opinions, *Cornhill:* College Life and the Empress of Russia, *Pall Mall;* Thoreau's Pity and Humor, *Spectator;* and for Fiction, "The Guinea Box," "Drunk in the Streets," the conclusion of the "Crookit Meg" and an instalment of "Adam and Eve," with the usual amount of poetry. A new volume began with July 1st. For fifty-two numbers of sixty-four large pages each (or more than 3,300 pages a year), the subscription price ($8) is low; while for $10.50 the publishers offer to send any one of the American $4 monthlies or weeklies with *The Living Age* for a year, including the extra numbers of the latter, both post-paid. Littell & Co., Boston, are the publishers.

Publishers' Department.

THE "CANADA SCHOOL JOURNAL" has always maintained its position in the van of the periodical educational literature of the Dominion, and has proved itself to be, what it was originally intended it should be, a strong help to the teacher in his work. Recommended by the Chief Superintendents of Education in Canada, and spoken of in terms of the highest praise by men of learning in the United States and in England, it has preserved a tone and attained a prestige which cannot be exceeded. Its columns are replete with all that is instructive and interesting in matters appertaining to School, College and University, so that both Teacher and Professor find it a welcome monthly visitor. Feeling the importance of such a journal, the Publishers are alive to the sense of their duty, and spare no pains to keep it continually up to the requirements of the age. They have now made an addition to their well-appointed staff, which they trust will be of advantage. A gentleman has been engaged whose special duty it is to collect local matters of interest to the teachers, to attend at their public meetings when necessary, and generally to devote his time and talents to the welfare of the JOURNAL. However, as he cannot be ubiquitous, there will exist, we are sure, a reciprocal feeling on the part of the Inspectors and Teachers in the Provinces, who will be so good as to send us from time to time short reports of important matters on educational subjects occurring in their own localities, and in this manner aid the publishers in the object they have in view. It should be borne in mind that, as an advertiser, the "CANADA SCHOOL JOURNAL" possesses immense advantages, and we would strongly commend to our friends the advisability of making use of its columns in that respect when they have occasion.

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Mr. T. W. Bicknell, editor of the New England *Journal of Education*, in response to requests from educators in many parts of the United States, proposes to issue, early in September, a bi-monthly magazine styled "*Education.*" In it will be discussed, by the leading educational writers of America and England, the art, science, philosophy and history of education, in all its phases. The general attention now paid to educational subjects by the masses of the people, the remarkable quickening of thought among educators themselves, and the earnest discussions and sharp criticisms of the press, point to the new era of a more rational as well as practical system of education for the people. What has been, is well, and, in the main, in the right direction. What is to be, will be far wiser and better. To help forward this work is the purpose of the new magazine, and the editor shall have the aid and sympathy of the best educational thought and purpose of the English-speaking people.

THE "Announcement of Pickering College for 1879 80" lies before us. A perusal of its pages leaves an impression of solid work being done within its walls with very little outside pretensions. "It was established," we are told, "by the Society of Friends for the purpose of educating young people of both sexes (irrespective of their religious denomination), and is conducted under the control of a committee of the Canada Yearly Meeting." Attached to the College are six several places of worship, besides the meeting-room of the Society of Friends, and all denominations have opportunities of attending the one indicated by the respective parents of the students. A remarkably noticeable feature of the College arrangements is the fact that no prizes or scholarships are held out as an inducement or stimulus to study. Knowledge is there represented as a prize in itself, of such intrinsic value as to be well worthy the labour needful to secure it; but although it is difficult to impress this with sufficient force on youthful minds, yet such moral suasion is exercised in the establishment that none are allowed to be idle.

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PERSONALS.

Mr. J. Arthur Freeze, A.B., Principal of the High School at St. Stephen, has been appointed to the like position at St. Andrews, in place of Mr. Jas. F. Covey, A.B., resigned.

—During a recent examination of a class of youngsters in one of our public schools, the teacher asked, "What is a monarchy?" and was immediately answered by an eight-year-old boy, "A country governed by a king." "Who would rule if the king should die?" "The queen." "And if the queen should die?" "The jack."

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VOL. V. TORONTO, OCTOBER, 1880. No. 41.

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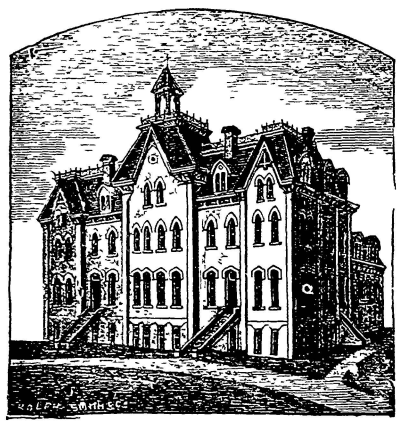

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The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

THE TEACHERS' SALARY QUESTION.

In a book of gossippy satire on American school "systems," by Gail Hamilton, she depicts in graphic language the chronic state of war between the ordinary school ratepayer and the teacher in the matter of salary. Of course very little of the details of this warfare reaches the public ear; but one can scarcely read in the newspapers the reports of trustee school meetings on this subject, without being impressed with this fact, that the majority of the trustees are under some invisible pressure which compels many of them to try either to reduce present salaries, or to employ what are called "cheap" teachers. Some Boards, too, even in large towns ambitious of the title and dignity of cities, systematically employ a number of third-class teachers, more or less, and even those with "extensions" and "permits," when they can be obtained, so as to avoid the necessity of giving good salaries.

It would be interesting, and doubtless curious, if not profitable, to analyze the causes which lead to such a state of things in towns and cities. In rural places such things do not excite the same wonder as in cities and towns, because and chiefly from the fact that salaries of all kinds are small in country places; and farmers generally look upon city and town salaries as ruinously extravagant. Dwellers in cities and towns, however, know full well from personal experience that the cost of living there justifies, if it does not make absolutely necessary, salaries much larger than would be required in a farming community. Why is it then that as in rural places, so in towns and villages especially, there is so frequently a chronic state of war, although not personally, between the ordinary ratepayer and the teacher on the question of salary? There are at least two reasons for this state of things, apart from the universal one of an outcry against taxation generally. The first and most general reason is that a teacher, as a person to be paid a salary, ought not to receive more than any other ordinary official or person in an inferior position—that is to say, that all such salaries should in some way be "equalized." Gail Hamilton, in her spicy book on "Our [American] Common School System," quotes a specimen opinion on this subject which exhibits the average intelligence of such writers on the question of "equalizing wages." She says:

"If the question of salary were left to a vote of the people, the pedagogues, instead of getting more, would be obliged to be satisfied with less. To be plain, they are made of the very same material as laborers, and do not require any more to sustain life; nor are they a whit more deserving; nor should they get a cent more for their time and services. And as to female teachers, it would be hard to make most people believe that they should receive for their services and time so much more than their equally-deserving and hard-worked sisters, the tailoress and work-girls of the various work-shops and factories in our midst, who are obliged to work, and diligently too, from early morn till dewy eve, for about one-half what the school teachers get for only four or five hours."

Gail Hamilton devotes a chapter in her book to pouring vials of wrath on a writer of such ignorance—but, as she says, "ignorance votes, ignorance pays taxes, and ignorance has rights;" therefore, ignorance should be heard and answered.

The second, and probably most practical reason, why there is generally such a wrangle about teachers' salaries, is that few if any of the objectors really know what the teacher has to do—what tact, judgment, mental labour and responsibility are necessary, and are exercised by the conscientious teacher. They rarely if ever visit the school-house—have little personal knowledge of, or sympathy with, the teacher—seldom hear of him, or her, except by way of complaint on the part of idle, careless or vicious scholars, and have a vague sort of idea that the teacher has little or nothing of any importance to do, except to sit at his desk and either hear the alphabet or "twice one *is* two," or "John (or Tom, or Ned) is a common substantive." Whether this latter, rattled off, parrot-fashion, by the party so named, is, or is not, an insinuation touching the dignity or respectability of John, Tom or Ned, is never clearly settled in the mind of the parent, but it has nevertheless awakened in his mind some vague idea of hostility, which takes more or less definite form whenever the question of his salary comes up.

As a general rule, the wear and tear of a teacher's life, mental and physical, is never taken into account. Nor is the daily drudgery of an unvarying routine, and the depression and languor caused by a stifling atmosphere in a school-room which makes no pretensions to ventilation. These things, with others equally important, never enter into the mind of the ordinary ratepayer and objector; and hence the thoughtless injustice which is so frequently done to the comparatively defenceless, but nevertheless laborious and conscientious teacher.

INDUSTRIAL EDUCATION IN PUCLIC SCHOOLS.

Industrial training is at present chiefly carried out in our prisons and reformatories. In the Kingston Penitentiary, that

afforded by the various workshops is a valuable reforming influence, as many of the discharged convicts are then enabled to earn an honest living, several instances of which have come under our observation lately in Toronto. But the great subdivision of labor necessary to make one of those workshops pay the contractor who hires convict labor, tends to prevent any one convict from learning the complete work of a trade; he usually masters but one department of it. And in the Report of the Inspector of Prisons in Ontario, in 1879, we find that out of 200 boys confined in the Provincial Reformatory, Penetanguishene, only 92 are employed as carpenters, shoemakers, tailors, at the turning-lathe, as bakers, and, curiously, only four on the farm; the remainder being engaged in work on the premises. In the Andrew Mercer Reformatory and Refuge, the Superintendent reports in favor of industrial employments, such as caneseating. shoemaking, paper-box making, tailoring, and sewing of all kinds. Still, this is, in all these cases, industrial *employment*, rather than *education*, being carried on for the purpose of making money by sales, rather than for that of teaching a trade. And were the latter attempted, it may be doubtful whether society would not do better to begin a stage earlier, and supply a rudimentary industrial training to the classes of children who are *not* criminal. This might do something to thin the influx into our reformatories and prisons. It is plain enough that mere ordinary school education does not effect this. We find by the Report before us, that out of 567 prisoners in the Central Prison of Ontario in 1879, no less a number than 414 could read and write, while 85 could read, but not write; the remainder, 68 only, could neither read nor write! We contend that if, instead of the industrial teaching being given in the reformatory, it were given in the Public School, many a boy might be diverted to honest industry who now matriculates at the street corners, and graduates in prison.

And we contend that the need of industrial training is imperative, quite apart from consideration of "the bad boys" of society. As it is, boys and girls are educated on a uniform method, their thoughts directed into the same channels, little scope being given for that differentiation towards the various trades and employments which ought surely to precede the adoption of any life-long pursuit. A boy is left to take up a trade at hap-hazard, under the mere force of circumstances; without trying his power of manual dexterity, of skill, of constructiveness, in other directions, he strikes out, by accident, his vein metal, and is compelled to work at that one vein for a life-time.

What we contend for is, not that trades should be taught in the public schools, but that there should be a few such rudimentary workshops in connection with each large school as might test for each boy the kind of work best suited to his tastes and powers. At least, a carpenter's shop and turning lathes might be provided, the latter to be worked by a small steam engine, in the use and manipulation of which those whose tastes led them in the direction of mechanical engineering might be instructed. Governments in modern times have recognized the duty of providing free education of the best obtainable kind for the children of all classes—it is but a further development of the same principle, that it should also provide the children in the public schools with the means of testing their abilities and tastes. Besides, in a country like ours, a young man should be able to turn his hand to many things. With us it is not as in England, where everything works in time-worn grooves, and each trade is a caste. How great an advantage that each boy should have some practical knowledge of carpentering, of house-building, of plastering, of the practical application of mathematics to land-surveying. A most excellent proposal is now under consideration for providing some means of instruction in scientific agriculture for our public schools through the counties, or perhaps still better in our County Model Schools. With regard to rudimentary industrial training, the experiment might be tried first in the city schools, the instructor to visit each in turn daily, and each workshop to be open for an hour. This would give a welcome break to the uniformity of purely mental study. With regard to girls, instruction in knitting and sewing is already given at our best schools. But this might well be done more systematically, and might extend to the different kinds of sewing, cutting out and tailoring; the aim being less to encourage showy fancy work, than to teach those useful acquirements which will be invaluable all through life.

THE HIGH SCHOOL GRANTS.

The New England *Journal of Education* for Sept. 10th contains an admirable leading article under the heading "Stand Up for the Children," directed against the anticipated attempt next winter, on the part of certain of the manufacturers and monied classes, to induce the New England Legislatures "to modify their beneficent system of laws" for the support of public education. Our contemporary is no doubt justified in the proud confidence which it fearlessly asserts that "the mass of level-headed working people in New England are the hearty friends of these laws, fully comprehend their scope, and will support the public men who stand between the children of the poor and their enemies" Indications are not wanting in the Province of Ontario of a similar feeling on the part of certain class interests against the grant given in aid of our High Schools. It will probably be urged that these schools exist for the benefit of a class who are well able to undertake their support. But to say this is to ignore the fact that the High School is an integral part of our public school system—providing a sphere of promotion for the purpose of higher education. The new blood there introduced by competition is of great benefit to those sons of the richer classes who form the staple of the High School, as the culture and better intellectual tone resulting from the High School work all over the Province is a benefit to those very persons whose short-sighted parsimony would oppose the comparatively small sums expended in attaining these results. But this hostility to the High School does not stand by itself. It is part of a dislike to our entire system of schools and public education, which has hardly the courage of its opinions, but shows its animus when it best can on such a point as the High School grant, or some other matter of detail in the working of the Ontario Education Department, in which class interests, local prejudices, and personal *amour propre* furnish ground for agitation and attack.

But, as in the case of the New England people, so with our countrymen of Ontario. We are confident that the great body of the people have learned to value that long-tried Education System which secures to all the inestimable blessing of knowledge, which opens a graduated scale of promotion to the poorest child, from the Public School to the University, which protects the selfish monied interests who rail against it from their own worst enemies, pauperism and crime.

Our system is no new notion invented by the present Education Department. It is the work of years, of men well versed in the requirements of our people, and the conditions under which schools can be carried on, and teachers trained. It is not now for the first time on its trial. A responsible Minister is at its head, who can be called to account for any alleged mis carriage in details, at the proper place and time, and by those to whom the people has delegated the right of so doing. Least of all do we believe that any appreciable fraction of the public will be influenced against our High Schools by penny-wise and pound-foolish economists, or against our Education Department and the Central Committee by a few noisy sore-heads, who fancy their own superabundant merits slighted, or even by one respectable journal, which makes the mistake of trying to get political capital out of questions with which political animus ought to have nothing to do.

THE SMALLER *VS.* THE LARGER HIGH SCHOOLS.

We would regret exceedingly if the partial statistics published in the last number of the JOURNAL with regard to the numbers passed by the Collegiate Institutes and High Schools, should mislead any intending to be students. As we stated at the time, several things must be taken into consideration before a fair comparison can be made regarding the real character of the work done in these schools. It should be known, 1st, whether all who wrote were actually pupils, or whether they merely came in for examination; 2nd, how long the students had been in attendance at the schools, in order to decide whether the school which *passes* a candidate deserves the credit for *training* him; 3rd, the number of candidates who wrote at each school should be compared with the number who passed. If these tests were applied, it would be found that in some of the Institutes the teaching done must be really vastly inferior to that done in many of the smaller and less pretentious High Schools.

The Hamilton Collegiate Institute furnishes a good illustration of this fact. The whole public school system of that city has been made subservient to the Collegiate Institute. After the death of the late estimable Inspector, Mr. Macallum, the Head Master of the Institute, secured control of the public schools also, so that the people of Hamilton may now be said to have no public schools at all. They have a Collegiate Institute with several preparatory forms in different parts of the city, whose function is to keep up the supply at head-quarters. How the intelligent citizens of the "Ambitious City" have so long mistaken advertising, for advancement; boasting, for progress; and mere coaching for examinations, for philosophical teaching, is a mystery. We recommend them to direct their attention to the careful consideration of the working and results of their peculiar school system. They should certainly have little difficulty in arriving at a just conclusion. No other city in Ontario can test its school system so easily.

In other places the school has varied aims, and performs numerous functions; in Hamilton there is but one goal for the teachers to reach. From the primary classes upward, all forces are used in constructing one narrow staircase, up which as many pupils as possible must be driven to reach the "Intermediate" chamber at the top. And what is the result? Surely with such a concentration of effort, and with the advantage of having a goodly number of the brightest students from outside, large numbers must reach the upper chamber. Can it be that the total outcome of a year's work—and the Hamilton teachers work hard—is the passing of the Intermediate Examination by three dozen students, only a part of whom belong to Hamilton itself?

We mention these matters in order to put young teachers, and others who intend to go from home to study, on their guard. The highest interests of education will not be served by building up a few large and showy institutions at the expense of the High Schools generally. One of the best features of the system is, that it diffuses the advantages of a higher education, and enables the children of rich and poor alike to obtain the best possible training at home. Those students who are caught by the deceptive logic of the number passed, and who rush to one or other of the schools of "unequalled attractions," forget that they are helping to magnify these institutions at the expense of the smaller and probably better schools in their own vicinity. They forget, also, that where there is the largest number of *passes* there is also the greatest number of *failures*. At the last examination in Hamilton 37 passed, but about twice that number *failed*. We have no doubt but that among the latter number are some who would have passed if they had gone to the humbler high school at home, where the numbers in attendance would not be so great as to prevent their receiving that amount of individual attention so necessary to their progress.

We hope to see the gulf between the High Schools and Collegiate Institutes narrowed, and the influence of the JOURNAL will be cheerfully given to secure this result.

EDUCATIONAL VANDALS.

The *New England Journal of Education* describes the men who oppose the free school system in the United States as follows:—"It is still true that men do not always die when the brains are out. There is still, even in New England, a pother against the free school system which has very little to do with reason, and less with knowledge. A considerable number of ecclesiastics, experts, scientific and otherwise, apostles of pessimistic social science, hard-headed millionaires and close-fisted grangers, zealous leaders of trade-unions, high-joint gentlemen and ladies in drawing-rooms, municipal economists, and

political sore-heads sometimes abuse the schools, the teachers, and those who support them, without rhyme or reason."

We have samples of the various classes above named in Canada. They have remained in a torpid condition during the past twenty years, but are now, in Ontario at least, beginning to show signs of awakening. Teachers and friends of the schools should remember that serpents do not lose their venomous tendencies during their annual sleep. The indications of a struggle against the growth and permanence of the State system of education in its best forms are numerous and definite. Already the enemy has taken advantage of a slumbering profession, and secured the breaking open of what Dr. Ryerson rightly named the "Sampson lock" of the school system; the right of Trustees to procure the funds to provide the necessary accommodation for the children resident in their section or municipality. Emboldened by their success in gaining possession of the outer trenches, they are now agitating for restrictions on the ordinary expenditures of School Boards, and they will never rest satisfied, or be quiet until they have secured the destruction of all that is essential to the complete success of the system of free education, or until the friends of education arise in their might, and drive them into their torpid state again. To do this will require vigilance on the part of all departments of the teaching profession, active sympathy and co-operation from the supporters of the schools, and decision on the part of the Minister of Education.

Nothing inspires an army so much as a general who is always at the head of his men when there is danger, and who would surrender his position rather than parley for a compromise with an inveterate enemy.

We are very glad that the Ontario Teachers' Association has appointed a Legislative Committee, as recommended in the August number of THE JOURNAL. The Hon. Mr. Crooks has intimated his desire to learn the views of the profession throughout the Province, and if he will lead the van the Philistines will speedily be routed.

EDUCATIONAL CONGRESS AT BRUSSELS.

An interesting report of the meeting of this important Congress appears in *The Schoolmaster* (London, Eng.) for Sept. 4. It was on the very largest scale, being attended by members of the teaching profession from all parts of the world. Many of the subjects discussed, such as the co-education of the sexes and the conflict of education laws with those of the Church, are to us dead issues. On the subject of *Kindergarten* and the methods of Froebel, there was quite a warm discussion, generally favorable to the system chiefly among the lady speakers. M. Emile Frelet, of Paris, read a valuable paper on School Hygiene, and Dr. Jarvel on Short-sightedness, or Myopia, which he found by an experience of twelve years very rare in infancy, being generally produced at school—prevailing especially in Germany, on account of the practice of reading at night with an imperfect light. As to Emulation as a means of school discipline, the Congress had a divided opinion, but on the whole the balance of papers read was against the distribution of prizes, the general effect of which was thought injurious. The Congress closed after a week of earnest labor and discussion, carried on with the utmost good humor.

—A teacher wrote to Professor Kennedy, one of the Institute Conductors of New York State, bewailing the fact that he was not supplied with apparatus, and asking for advice. The reply of Professor Kennedy is eminently sensible and practical, and we commend it to the large class of teachers who are paralyzed because they have "nothing with which to teach," who cannot have object lessons without a costly cabinet of prepared specimens, &c. Few are in a worse condition than the correspondent of the Professor, whose full supply of apparatus consisted of "one water-pail, one small drinking cup, and ¾ of a broom." The following is the reply of Professor Kennedy:

I am pleased to acknowledge your favor of the 30th ult. You have my sympathy in your struggle against ignorance and indifference. The state of things as you describe them is simply shameful, and I am sorry to say it is not a solitary example of the way our children are despoiled of their rights and comforts. But our duty becomes only the more sacred and imperative under such circumstances. We cannot teach without facilities; we must have them—if not of the elegant sort, then of the primitive sort.

A newspaper over the window does not look as well as a Venetian blind, but it will save the eyes of the children. A croquet ball is not as finished a piece of apparatus as a tellurian, and yet it can be made to illustrate the whole of geography. Kernels of corn are not as professional as a numeral frame, and yet they are real units. Splinters, chips and fragments of ribbon may be made to furnish a complete apparatus for kindergarten work, geometrical forms, colors, inventive drawing and language lessons. Slated paper is less imposing than a wall slate, and yet it can serve all the purposes of blackboard surface.

Some bold crayon marks in different colors, on white paper, can be made to serve the purpose of outline wall maps.

We can work, you see, if we must, with very primitive apparatus. These things test one's fertility of resource. I hope you will distinguish yourself by your ability to improvise apparatus. You have scholarship, intelligence and purpose; such elements will win under any circumstances. Let us show that school work can go on in spite of vicious economy. If you cannot find sympathy and co-operation in official circles, seek it among the children; make them enterprising, and they will move their stolid parents.

Very respectfully, JOHN KENNEDY.

—The London School Board has an annual competition in drill between the male pupils of the schools under its control. The examiner this year was Col. J. P. Battersby, of the Royal Military Asylum, Chelsea. As an appendix to his report he made the following recommendations:

"I would venture to recommend that the short time allotted for drill be chiefly spent in the 'setting up' of the children—that is, in the development of the frame and the position of the body standing in the ranks, and while marching, more than in teaching them to turn and march to the front, and to a flank in 'rank entire,' 'files,' and 'fours.' If these movements are executed with precision, the time has been well spent.

"In testing the merits of a school in this respect, I think the master should be called upon to drill the boys. It can thus be ascertained what control over them he has acquired, and his method of exercising it. If this is good, the influence is felt not alone on parade, but during school hours; and I do not hesitate to say that the best drilled school will be the most easily managed, and that more instruction will be imparted in a given time, and with less expenditure of the master's power, where he has been able to enforce a prompt and accurate compliance with his orders on the drill ground."

The work recommended by Col. Battersby is almost precisely the same as that prescribed for the public schools of Ontario. If taught by the regular teachers in all the schools, there would be less complaint about "cramming." The physical has as much need for direction in its development as the mental has.

Contributions and Correspondence.

UNIVERSITY COLLEGE.

THE RECENT APPOINTMENTS.—LETTER FROM DR. WILSON, PRESIDENT OF THE COLLEGE, TO HON. MR. HARDY.

SIR,—I have the honor to acknowledge your letter of the 27th inst., in which you ask for a report on the recent appointments of a Professor of Classical Literature and a Classical Tutor and Dean, in University College.

1. Mr. Maurice Hutton, the newly appointed Classical Professor, was elected to an open scholarship at Worcester College, Oxford, in 1874, and his whole subsequent career has been one of uninterrupted success. He obtained a First-Class in the First Public Examination, and took the same rank in the Final Honor School of Literæ Humaniores. Soon after taking his degree he was elected to an open Fellowship at Merton College, Oxford; and on the authorities of Firth College, Sheffield, referring the choice of a Professor of Classics to the heads of Colleges at Oxford, he was selected from a list of candidates of high academic distinction to fill the chair.

It is almost superfluous to add that at Oxford I received gratifying assurances that, in Mr. Hutton, University College obtains a Classical Professor of the highest university training, and one who had, in various ways, given unusual evidence of capacity and sound scholarship. I confidently anticipate that this appointment will be found to give the highest satisfaction to all who take an interest in the prosperity of our Provincial University and College. Mr. Hutton assumes the duties of Professor, with no other office attached thereto.

2. Mr. F. A. Vines is the gentleman selected as Dean and Classical Tutor. In every previous appointment of a tutor the harmonious co-operation of the professor and his assistant has been recognized as so essential that, alike in the departments of Classics and Mathematics, the choice has practically rested with the Professor. Nevertheless, when the Minister of Education referred the subject to me, while fully recognizing the weight which was due to the judgment of the newly-appointed professor in the selection of the classical tutor, I specially invited the attention both of Professor Hutton and of the Minister of Education to the qualifications of one of our own Canadian graduates. I have since learned that the position which he already occupied had greater attractions.

Of Mr. Vines, the gentleman finally selected, I learn from Mr. Evelyn Abbott, Fellow and Tutor of Balliol College, as well as from Professor Hutton, that, owing to over-exertion, both physical and mental, Mr. Vines' health broke down during his undergraduate course at Oxford, insomuch that in preparing for moderations, "the latter part of it was carried on in bed; and he was not permitted to read for honors in the final schools." Hence his academic ranking very inadequately represents his qualifications. The Vice-Provost of St. Mary's writes of him: "As a Balliol man, your tutor has received the highest culture which Oxford can give. His early success in gaining a scholarship at Pembroke, and an open exhibition at Balliol, shows that he must have a thoroughly sound basis of classical knowledge." Professor Hutton, from the conviction he had of Mr. Vines' acquirements and personal fitness, gave him the preference over others of higher academic standing in the school lists.

3. It was desirable, alike for economic and other reasons, to continue in the same person the joint offices rendered vacant by the retirement of the late Dean and Classical Tutor. With a new President entering on his duties, the transference of the College Registrarship to a stranger would have proved peculiarly embarrassing. Had, indeed, Mr. Baker, who holds that office, along with the Mathematical Tutorship, been appointed Dean, the zeal and efficiency with which he has fulfilled every duty hitherto entrusted to him, justify the belief that he would have satisfactorily filled that responsible post. But, apart from the inconveniencies which his transfer to that office must have involved, I fully anticipate carrying out arrangements in connection with his present duties which will prove at once more acceptable to himself, and better calculated to promote the true interests of the College.

5. In approving of Mr. Vines as Dean of Residence, the special requirements of that office have been kept fully in view. It is, indeed, one of the most difficult offices in the College to fill satisfactorily; and great as the responsibilities of the President are, he must rely, to a large extent, on the wise prudence and judgment of the Dean for the successful working of the college residence. It may, perhaps, suffice now to say that it was not till after considerable correspondence, very careful enquiries, and personal intercourse with Mr. Vines, that I satisfied myself that the College Council might rely upon him as one possessing the energy, tact, and judicious union of firmness and kindly social amenity which must command the respect and good-will of those placed under his care. I received no less satisfactory testimony that in him the College acquires as its Dean, a thoroughly high-minded man, impressed with the responsibilities involved in undertaking the oversight of the resident students; and conscientiously desiring to use his influence in guiding them wisely at the most critical period of their lives.

It is perhaps necessary that I should add that the salary payable to Mr. Vines for the joint duties of Dean and Tutor is less than that which his predecessor received when holding the same offices.

I have the honor to be, Sir,
Your most obedient servant,
DANIEL WILSON.

University College, Toronto, 28th Sept., 1880.

To the Hon. A. S. Hardy, Provincial Secretary.

To the Editor of the Canada School Journal.

SIR,—The Rev. D. H. MacVicar, LL.D., S.L.P., Principal, Presbyterian College, Montreal, made certain remarks against the Catholic Church, before the Ontario Teachers' Association in Toronto, which appeared last October in your columns. As I am convinced the "Canada School Journal" will be kept free in future from the reproduction of all such matter, I forego for the present my clear right to be heard in reply to his attack, and this all the more readily as the press in both provinces are giving me a full and fair hearing.

Yours truly,
M. STAFFORD, P. P.

Lindsay, Sept. 22nd 1880.

THE SUBJUNCTIVE AND POTENTIAL MOODS.

BY C. P. MASON, B.A., F.C.P. AUTHOR OF MASON'S ENGLISH GRAMMAR, &c.

The account of the Subjunctive Mood given in my English Grammar involves nothing which will be found new or strange by any one acquainted with what has been said on the subject by such grammarians as Becker, Matner, Madvig, Kuhner, Key, Roby, Peile, &c. The statements found in most of our current English Grammars are quite worthless.

The following considerations are important:

1. It is absolutely necessary to keep clearly in view what it is that we are talking about. There is a wonderful amount of confusion on this point. The 'Indicative Mood' and the 'Subjunctive Mood' are not certain *modes of using verbs*, but certain *groups of verbal forms*. Such forms as *sum, est, amo, monebo, audivi*, &c., in Latin; *bin, hast, liebt, sprach*, &c., in German; *was, has, am, is*, &c., in English, belong to the Indicative group, and are *Indicative*, whatever may be the construction in which they are found. Such forms as *sim, esset, amem, audiverim*, &c., in Latin; *sey, wäre*,

habest, spräche, &c., in German; [*he*] *be*, [*I*] *were*, [*thou*] *have*, and certain compound tenses, made up of subjunctive forms of the auxiliary verbs, *may*, *might*, *should*, and *would*, in English, belong to the Subjunctive group. *Verb-forms* may belong to one or the other of these groups, but cannot possibly belong to both. To talk of an 'Indicative-Subjunctive form,' is like talking of a 'round-square hole.' The 'force of dulness' could hardly 'go further' than setting down '*if I am*,' '*if I was*,' &c., as the Subjunctive Mood of the verb *to be*. Yet the absurdity will be found perpetrated in not a few English Grammars.

2. The account given of the Subjunctive Mood must be such as to apply to the earlier forms and usages of the language as well as later. The group of forms which belong to the Subjunctive Mood are more sparingly used now than they used ts be; but as regards their nature and functions they have never changed.

3. In ascertaining the true force and function of the Subjunctive Mood, we are not only permitted, but bound to take account of the usages of German, Latin, and other languages of the Aryan family. The fundamental ideas upon which the distinctions of mood are based (like those which relate to the functions of the parts of speech, of numbers, persons, voices, tenses, cases, &c.), are common to English and Latin, and as March observes (*Anglo-Saxon Grammar*, § 421), "The Teutonic Subjunctive has the general range of the Latin Subjunctive."

4. The ascertainment of the functions of the group of forms called 'Subjunctive' can only be effected by examination and comparison of instances of their *actual use*. We are not in the slightest degree bound by the signification of the name which these forms happen to bear. That name, like many other grammatical terms in use, is nothing more than a record of the attempts of the early Greek and Roman grammarians to classify and explain the forms that they met with. These attempts were rarely very successful. They were based upon a very imperfect knowledge of the facts of language, and were often clumsy and capricious. The name *Subjunctive* was a particularly unfortunate one. It does not in the least degree explain what the force of this particular group of forms is, which makes them proper for use in certain kinds of subjoined clauses, while it has betrayed many into the ridiculous mistake of supposing that we get (or at least ought to get) a *Subjunctive Mood* whenever we have a verb used in a *subjoined clause*.

5. The learner must bear in mind that a word or a grammatical form hardly ever *expresses* the whole of the signification which is attached to it in each of its different uses, but only something much wider and vaguer. To this vague sense that underlies *all* the uses, the intelligence of the speaker or hearer, guided by the sense of the connection in which the word or form occurs, attaches in each special case various *accessory notions*, by which the general sense is differentiated into its particular applications. We shall go entirely wrong if we attempt to regard the whole sense that is attached to a word or form in *one use* as essential to it in every use.

6. It will be found stated in the great majority of English Grammars that the function of the Subjunctive Mood is to express uncertainty, or to state an action conditionally. The learner must disabuse his mind of the idea that the Subjunctive Mood is necessary for either of these purposes, or always effects them. Both *uncertainty* and *conditionality* may be expressed by means of the Indicative Mood, when the *uncertainty* or the *condition* has reference to *actual facts*. When I say "The man deserves to be hanged," I make an *unconditional* statement. When I say "If the man is guilty he deserves to be hanged," I make a *conditioned* (or *conditional)* assertion, *i.e.*, an assertion made *subject to the previous admission* of another proposition, *of the truth of which I am uncertain*. The case is precisely the same with such Latin sentences as "Tute scis si modo meministi, me tibi tum dixisse," &c., 'You know, if only you remember,' &c. (Cic. *Att.* xii. 18); or "Ego si bonam famam mihi servasso, sat ero dives," 'I shall be rich enough, if only I preserve my good name' (Plaut. *Most.* 228); or "Aequitas tollitur omnis, si habere suum cuique non licet," 'All justice is abolished, if it is not permitted to each to have his own' (Cic. *Off.* ii. 22). Examples of this kind may be multiplied *ad libitum*. They effectually dispose of the assertion that the Subjunctive is necessary to express *conditionality* or *uncertainty*.

Of course everybody knows that the Subjunctive Mood is employed in some sorts of conditional statements. Thus, 'If he *were* wise, he *would act* differently'; "Wenn er reicher *wäre, wäre* er nicht glucklicher" ('If he were richer, he would not be happier'); "Tu si hic *sis* aliter *sentias*" (*Terence*. 'If you were in my place, you would think differently'); "Si scissem in quo periculo esses, statim ad te *advolassem*" ('If I *had known* in what danger you were, I *would have flown* to you at once'). Here we have a set of conditional propositions expressed by means of the Subjunctive Mood. They differ from those in whieh the Indicative was used in this respect, they do not involve a supposition respecting some *matter of fact* of which we are uncertain, but what is supposed is dealt with merely as a *matter of conception*. In some cases the supposition is obviously at variance with the known fact.

It is of prime importance to have it clearly understood that the Subjunctive Mood is not essential to the expression of a hypothesis or condition, but that the Indicative is the proper mood for a conditional statement when the subject dealt with belongs to the sphere of actual fact, independent of the thought of the speaker, while the Subjunctive is the proper mood for a conditional statement when the subject dealt with is matter of conception, because many grammars of repute abound with incorrect statements on this point, and no advance towards a correct understanding of the matter can be made till the misconception referred to has been cleared away. When, however, we have gained a perception of the true import of the Indicative and Subjunctive Moods respectively, we are able to deal with a great variety of constructions about which writers who make the mistake referred to find ft convenient to say nothing.

Thus in Latin *quod* (because) is followed by the Indicative when the *actual* reason of an action or event is described, but by the Subjunctive when the writer (or speaker) states a reason which is only *thought of* by him, either because it was not the real reason, or because he brings it forward as *somebody else's reason*. Thus "Succensui ei magis quod me consilii sui certiorem non *fecerat* quam quod consilium ipsum *inivisset*" (*Cicero*): 'I blamed him more because he had not informed me of his design (*real* reason), than because he had entered upon the design itself' (reason denied, and therefore only *thought of*). "Laudat Panaetius Africanum quod fuerit abstinens" (*Cicero*): 'Panaetius praises Africanus for being abstinent' (a reason which, though real to Panaetius, is not vouched for by Cicero, and therefore is to him a *matter of conception* only).

Another instructive illustration is given by constructions with *antequam* and *priusquam* (*before*) or *donec* (*until*). When the object is to state that of *two actual facts* one precedes, or lasts up to the other, the Indicative is used. "Antequam tuas *legi* literas, hominem ire cupiebam" (*Cicero*). "Haud desinam donec *perfecero*" (*Terence*). But if a certain event has only a *conceived* relation of priority to some other, which may or may not happen according to circumstances, the Subjunctive is used. Thus "Numidae priusquam ex castris *subveniretur* in proximos colles decedunt" (*Sallust*), 'The Numidians withdrew unto the nearest hills before reinforcements *should come* from the camp' (an event which possibly might not happen at all, and therefore is only *thought of*).

It is obvious directly why the Subjunctive is used to express *purpose*. An action that is *intended* is necessarily, in that aspect, one that is only *thought of*. In Latin, *consequence* was also expressed by means of the Subjunctive, the result being treated merely in its *conceived consequential relation* to the antecedent event, without taking its actual occurrence into account, just as when we say in English "He was so exhausted *as to be unable to stand*," where the actual fact that he was unable to stand *is not asserted*, but is left to be inferred (see Roby, *Lat. Gr.* § 1499).

Another remarkable illustration of the true function of the Subjunctive is seen when it is used in a subordinate clause to give *a general statement* of some circumstance or condition connected with an event, without asserting *definite instances* of the actual occurrence of the circumstance or condition in question. Thus "Bonus segnior fit *ubi neglegas*" (*Sallust*), 'The good man becomes more supine when you *neglect him*.' The Indicative *neglegis* would have implied that the 'you' in question was some individual actually addressed by the writer, and that there were certain definite, actual instances on his part of the neglect in question. So when the Indicative follows a relative pronoun, the clause makes a statement of actual fact respecting some *definite* person or persons whom the relative represents, but when the Subjunctive is used, the clause becomes *the general description of a type*. Thus "Hoc non erat ejus qui innumerabiles mumdos mente peragravissett" (*Cicero*), 'This was not becoming to one who had traversed innumerable worlds in thought.' Here the statement is made, not of a single individual, but generally of any one who might answer to the description. The Indicative would have tied down the statement to a particular individual, as a matter of actual fact. So in "Abiit consul ut quem nemo *metueret*," the writer describes a *type*. *Metuebat* would have restricted the clause to a definite individual, of whom (as a matter of fact) nobody was afraid. Instances of this sort must not be con-

founded with universal assertions, in which definite matter of fact is asserted of each and all of a certain class.

In Anglo-Saxon, as in Latin, the Subjunctive mood was used when the purpose of an action had to be stated. Thus "Dá sende he hine to his tune pæt he *heolde* hys swyn" *(Luke* xv.) 'Then sent he him to his farm that he should keep his swine.' It is also used (as in Latin) to express *consequence.*

The use of this mood in conditional clauses corresponds to the Latin usage. Thus "Gif mec hild *mine (Beowulf* 452), 'In case battle *should take* me.' "Gif *þu wær* hèr nære min bròdor deád" *(John* xi. 32), 'If thou hadst been here, my brother would not have been dead.'

The use of the Subjunctive in Anglo-Saxon is even wider than in Latin. It is employed not only in dependent questions, but also in a *reported* statement of fact or opinion, for which the reporter does not vouch. Thus "He sægde pæt Sarra his sweostor wære," 'He said that Sarra was *(were)* his sister' *(Caedmon).* But if the reporter vouches for the fact reported, the Indicative is used, as "pá he gehyrde pæt he seóc wæs," "When he heard that he was sick' *(John* xi. 6).

The Subjunctive is used in Anglo-Saxon, as in Latin, to describe a *potential class*, that is, one which is merely constituted by the definition *(as something thought of)*, and not by relation to some actual fact. Thus: "Se *þe* hæbbe earan to gehyranne gehyre," 'Whoso hath *(have)* ears to hear, let him hear' *(Mark* iv. 9). The usage is similar in Chaucer as Whoso *wole* my juggement withseie" *(Prol. 805)*; But it *were* any person obstinat,, What so he *were* of high or lowe estat" (521).

The nominal use of the Subjunctive which has been described above has been subjected to two contrary tendencies.

1. Our earlier writers often employ the Subjunctive in hypothetical statements when the Indicative would have been strictly proper, there being a natural temptation to treat all hypotheses as dealing with matters of conception. Thus we sometimes find it used not only in putting a *general case*, when it is strictly correct (as in "But if he *be* a robber, if he *have* eaten upon the mountains, if he *have* oppressed the poor and needy, *have* spoiled by violence, *have* not restored the pledge . . . shall he live?"—*Ezek.* xviii.), but even in treating of actual fact in an individual instance. Thus, "If the young gentleman *have* done offence, I take the fault on me" (Shaksp. *Tw. N.* iii. iv. 343). So also the priority of one fact to another is often treated in its *conceptive* instead of in its *real* aspect. Thus "Ic wæs ær *þam þe* Abraham *wære*," 'I was before Abraham *were*' (*John* viii. 58). So in Chaucer, 'Er it *were* day' (*Kn. T.* 182). But

2. The tendency of modern usage is all in the opposite direction. We have grown impatient of the subtle distinction involved in the use of the Subjunctive Mood, and have substituted the Indicative for the Subjunctive in many constructions in which the latter was once usual, and certainly more correct. Instead of 'He that *have* ears to hear,' we say 'He that *hath* ears to hear'; instead of 'He said that he *were* sorry,' we say 'He said that he *was* sorry'; instead of 'If it *be* fine to-morrow,' we say 'If it *is* fine,' and so on. Some even use such expressions as 'If it *was* possible I would grant your request.' It is to be hoped that their example will not be widely imitated. The point to be observed is that all this is not simply the disuse of a superfluous set of forms. It is a partial disregard of a certain delicate distinction between two types of predication, and the consequent disuse of the varieties of form by which the distinction is marked. In so far as we have ceased to use Subjunctive forms it has been because we have ceased to take the trouble to form the ideas which the Subjunctive Mood expresses. But though we now use the mood more sparingly than formerly, when it is used its function is just the same as ever. There are writers, however, who jumble together sentences of the old type with sentences of the modern type, and treat them as though both these different forms of expression were intended to represent precisely the same form of thought.

It is necessary to caution the learner that the Subjunctive Mood has not disappeared from our language to so great an extent as is sometimes represented. In the Preterite tense of most verbs, it is true, there is now no difference of form between the Indicative and the Subjunctive. But this is not because the Subjunctive forms have been assimilated to the Indicative forms, but because the distinctive marks of *both* have vanished. It is rather arbitrary to assign what is left to the Indicative Mood exclusively, and to say that the other mood has disappeared. The converse process would be just as reasonable. We still preserve a clear sense of the difference of function. If we compare 'I *could* not do it when I *tried*,' and 'I *could* not do it if I *tried*,' our consciousness of the difference in import is brought out the moment we attempt to substitute equivalents that differ in form. *Could* in the first means *was not able.* We see instantly that we cannot substitute this in the second. This makes us aware that *could* is not the same word in the second sentence as in the first.

Another point that the learner must keep in mind is, that in modern English complex forms made up of *may, might, should* and *would*, have superseded the old simple forms (see the text of the Grammar, § 192). But he must beware of supposing that he has got a Subjunctive Mood whenever he has got one of these complex forms. Very often the mood is the Indicative. Thus: "You may leave off work." = 'You *are permitted*,' &c. "That *may* be so." = 'It *is possible* that that is so.' "He would not open the door when I knocked," = 'It *was not his will* to open the door,' &c. "He said that I might come in," = 'That it was permitted to me to come in.' It is only when the auxiliary verb is itself in the Subjunctive Mood, and has lost its notional significance, that we get a Subjunctive complex tense.

THE POTENTIAL MOOD.

The so-called Potential Mood is the product of a series of blunders and misconceptions, and has been discarded by all the best authorities. "I can write" or "I must write" is not a *mood* at all in the sense in which 'I write,' 'I should write,' or 'Write [thou],' is a mood. If you take a subject (say 'John'), and a verb (say 'write'), when the Indicative, Subjunctive, or Imperative Mood is used, the *act of writing* is predicated of John in some manner, affirmatively or negatively, as a matter of fact, as matter of conception, or as matter of volition. But if we say 'John can write,' or 'John must write,' we predicate of John not *writing*, but the *ability* to write, or the *obligation* to write, which is a totally different affair. Nobody thinks of giving the name 'Potential Mood' to such combinations as 'Scribere possum,' 'γραφειν δυναμαι,' 'Ich kann schreiben, or 'Je puis écrire,' Its retention in English grammar is anomalous and absurd.

The history of its introduction may be clearly traced. The Greek grammarians led the way by setting down the Optative as a mood distinct from the Subjunctive. The Subjunctive and Optative of Greek grammar really differ from each other merely as *faciam* and *facerem* differ in Latin. They are the verbal forms for conceptive predication associated respectively with present time and with past time, and do not really constitute different moods at all. Priscian and other Latin grammarians thought they must follow the Greeks in the use of these two names, although both the present and the past forms of the Subjunctive in Latin may be used to express a wish, and accordingly they set down *Modus Optativus*, as well as a *Modus Subjunctivus*; but in doing this they merely gave *two names* to identically *the same set of forms*, one to be applied when these forms served one purpose, the other when they served other purposes. The Greeks were at least free from this blunder, for they gave their two names to two distinct groups of forms. Lily and his followers, who made our old Latin grammars for us, made confusion worse confounded by giving *three* names *(Optative, Potential*, and *Subjunctive)* to the same set of forms, according to the mode in which they were employed. The term 'Potential,' however, was simply one of the *aliases* of the Latin Subjunctive.

The early writers of English grammars did little more than adapt Lily's system with as little change as possible to English, and so our forms for conceptive predication inherited the same *aliases* that were current in the Latin grammars. Some persons, indeed, did not find three names enough for them. Thus Maittaire, after stating that there are three finite moods in English, the 'Indicative,' the 'Imperative,' and the 'Potential,' goes on to say: "The Potential is named sometimes 'Subjunctive' or 'Conjunctive,' because it is joined to another sentence by some word or particle, sometimes 'Optative,' sometimes 'Dubitative." But the point to be observed is that the terms 'Potential' and 'Subjunctive' denoted not different sets of forms, but different uses of the same set of forms.

Unhappily some wiseacre or other, finding that English had two classes of forms for expressing conceptive predication, the older simple forms, and the later forms made with auxiliaries, and that two names for these were in use—Subjunctive and Potential—hit upon the bright idea of calling the simple forms 'Subjunctive,' and the compound forms 'Potential,' and setting them down as distinct moods; and this was followed by the monstrous blunder of extending the name Potential to all combinations of the verbs

may, *can*, *must*, *shall*, &c., even though these verbs were used in the Indicative Mood, and with their full notional sense. When we say, 'I can swim,' 'He must wait,' 'He would not come when I called him,' 'He could not do it when he tried,' 'You may leave off work,' we have direct statements of fact, and *can*, *must*, *would*, *could*, *may* are in the *Indicative* Mood. These verbs help to make up a subjunctive or conceptive form only when they are themselves in the Subjunctive Mood, as was long ago pointed out by Lowth in his English Grammar.

The whole history of the Potential Mood illustrates what has been termed 'the gigantic power of impregnable stupidity,' and justifies the sarcasm of Scaliger: "Grammaticis nullus finis inep-tiendi."

PRINCIPAL POINTS IN HYGIENE TO BE TAUGHT IN SCHOOLS.

READ BEFORE THE TORONTO TEACHERS' ASSOCIATION BY DR. PLAYTER, AUTHOR OF PLAYTER'S PHYSIOLOGY.

The teacher has much to do with the moulding of the mind, with the building up of the brain of his pupils, and upon the brain of the growing school children of the present day depends, not only the future good or evil of the individual men and women which these children soon become, but the future greatness or otherwise of our country, with which is bound up largely our own happiness and well being. Hence the responsibility of the teacher is great, and it will be well for him to bear in mind that, while aiding in the structure of that delicate organ, the most wonderful structure in the entire universe, the human brain, a little too much pressure may cause irreparable injury; a little overwork may cause such defects in the delicate highly wrought organ as neither time nor even eternity may efface.

You doubtless all know how largely the development and perfection of the brain structure, and consequently of the mind, depend upon the food consumed and the air breathed; in short, depend upon the general physical health. And you all know how large a proportion of the cases of sickness which afflict the human family, and of the premature deaths which bring, alas! too often, such terrible grief and desolation to our hearths and hearts, come from want of knowledge of the simple laws of health. You all will, therefore, I do not doubt, readily concede that the whole subject of hygiene—*every part of it*, forms one great, one *principal point*, which should be much more universally taught in the public schools than it is at the present time.

You will not probably differ from me when I say, it is much more essential for the future happiness and well-being of the child to acquire a knowledge of the vital actions which are constantly going on in his own body, and of the common and wide-spread causes of disease and premature deaths, and of the means of avoiding these causes, than to have impressed upon his young mind the names of the longest rivers and the highest mountains in the world, or of the principal cities, rivers and bays of foreign countries; or to learn of the doings of the Emperor Nero, or of King Henry VIII. and their subjects. In short, and I think you will all agree with me when I say that, after a child has once learned to read, and write, and figure a little, he cannot begin too soon, indeed it is of the first importance that he should begin, to learn something about how to take care of one of the noblest works of the Creator—his own body, the temple of the spirit of God. And I feel it to be my duty, whatever your opinions may chance to be regarding my motives, to appeal to you here, teachers in this metropolis, this centre of the foremost province of Canada, to lend your influence in every possible way towards bringing to a more prominent place—to its proper place and position—as a subject to be constantly and universally taught in the public schools of this country, a country for which we all, I doubt not, anticipate a glorious future, this very important one of hygiene. Depend upon it, by so doing you will then aid most in the development of such future.

But in teaching hygiene in schools, there are doubtless some points of it, especially now, and until the whole subject assumes its proper place in the minds of teachers, and perhaps of the public generally, to which more attention is due than to other points. And now we come to the subject of this paper, the "Principal points in Hygiene to be taught in School," which I have been requested to take up. It appears to me that the subject of hygiene may be best taught under the heads of what we find to be the essentials of life and health. We are provided with life, and the necessaries with which we may preserve and prolong that life, and as it is our bounden duty to make the most of our life, health is a talent for which we must all give an account, so it is our bounden duty to make the most intelligent use and application of these essentials of life. They are air, water, food, exercise, rest and sleep, sunlight, clothing, bathing.

AIR AND HEALTH.

Air is the first essential of life and health, and the Creator has provided an absolutely unlimited supply for the use of His creatures. Water, which may be regarded as the next essential, is very abundant, but less so than air: while food is much less plentifully supplied. It may be because of its very abundance that man so commonly overlooks or disregards the great value of air; and in the higher civilization which he creates, and which carries him onward and upward, he neglects frequently to seek, in the first place, localities in which it is naturally most pure, and most favorable to health and life; or by surrounding himself with elegant but almost impervious walls, he shuts out the pure air and breathes over and over again the small measure he has so closely imprisoned; or he makes foul that near his dwelling, by waste excremental matters, chiefly from his own body, or by the products or refuse of the occupations by which he lives.

That most eminent sanitarian, Dr. Parkes, says: "It might be inferred from the physiological evidence of the paramount importance of proper aeration of the blood, that the breathing of air, rendered impure from any cause, is hurtful, and that the highest degree of health is only possible when to the other conditions is added that of proper supply of pure air.

The subject of air in its relations to health and life is a very wide one, and constitutes indeed a very large proportion of the subject of hygiene. It involves the consideration of climatology, locality, drainage, and the situation and general construction of dwellings and all buildings intended for habitations, of ventilation and warming, the removal or disposal of all waste or excremental matters—sewage, etc., disinfection, and the isolation of those affected with contagious diseases, who dangerously poison the air. The discussion of these also applies to the important essentials, water and food; for by imperfect sewerage, or removal far away from us of all excrete waste matters, the water may be rendered foul, and by impure air foods are rendered impure.

The habitations and works of man furnish the most important impurities in the air: such as the products of respiration and perspiration, and of lighting and warming, effluvia from excremental waste matters—sewer gases—and emanations from work in various shops and factories.

Connected with the subject of air, or, indeed, with the whole subject of hygiene, no point, I think, in our present mode of living, of housing ourselves, is of so much importance as that of *ventilation*—the changing and renewing of the air around us, or in our dwellings. It is more than probable that the breathing of air

vitiated by the products of respiration and perspiration—in dwellings, schools, shops, from want of free ventilation—gives rise to more cases of serious sickness than any other cause of disease. Next to this, probably, comes air rendered foul by emanations from decomposing, waste excremental matters near habitations. The evil effects of breathing again air which has been once breathed, and thus taking into the body again the waste excreta of the body, are constantly becoming more and more manifest. The rebreathing of breathed air undoubtedly gives rise to a poisoned, or, as it is called, putrid, condition of the blood, just in proportion to the amount inhaled. Baudelocque, a celebrated French physician, asserted long ago, that the repeated breathing of the same atmosphere is a primary and efficient cause of scrofula, consumption being one of its most common forms, and that hereditary predisposition, uncleanliness, want of proper food and clothing, cold and humid air, are by themselves non-effective. He says that invariably it will be found, on examination, that a truly scrofulous disease is caused by breathing air vitiated by respiration, and that it is not always necessary that there should be a prolonged stay in such atmosphere. Often, a few hours each day is sufficient; as sitting in a close school-room, or sleeping in a confined bed-room. You all know that with every breath, every child, and the child in a larger relative proportion than the adult, gives off a quantity of poisonous organic matter, which is believed to be carbo-ammoniacal in its composition. This poison hangs about a room like tobacco smoke, and it is but slowly oxidised and destroyed. It soon taints meat and sours milk when exposed to it, and renders water through which it is passed very offensive. It is this substance which causes the mischief—the putrid condition of the blood, the scrofula, consumption and general illness to which rebreathing breathed air gives rise, and not the carbon-dioxide, or carbonic acid gas; as some works on hygiene erroneously teach. The carbon dioxide in itself, in considerable quantities, is not particularly injurious to breathe, even in the proportion of 2 per 1000 volumes of air; but it serves as an infallible guide to the amount of organic impurity in breathed air.

In a lecture before the students of the College of Physicians and Surgeons of New York, Dr. Willard Parker, the lecturer, used the following suggestive illustration of the manner in which the air becomes contaminated by respiration: "If, gentlemen, instead of air, you suppose this room to be filled with pure, clear water, and that, instead of air, you were exhaling twenty times a minute a pint of milk, you can see how soon the water, at first sparkling, would become hazy and finally opaque, the milk diffusing itself rapidly through the water. You will thus be able to appreciate, also, how at each fresh inspiration you would be taking in a fluid that grew momentarily more impure. Were we able to see the air as we are the water, we could at once appreciate how thoroughly we are contaminating it, and that, unless there be some vent for the air thus vitiated, and some opening large enough to admit a free supply of this valuable material, we will be momentarily poisoning ourselves as surely as if we were taking sewage matter into our stomachs."

It is then of the first importance that children be impressed with the absolute necessity of always securing for themselves, under all circumstances, a supply of pure fresh air, in school-rooms, in bedrooms, everywhere.

I would endeavor to persuade the children to get somewhat accustomed to draughts of fresh air, and not to fear them. We face for hours and days while riding out, strong gusts and draughts of wind without fear, without receiving injury therefrom. Why should we so fear draughts within doors? It is bad, to be sure, to get *chilled* by a draught outdoors or in.

The children should be taught to have sufficient fresh air coming into their sleeping room during the night to thoroughly prevent the air in the room in the morning giving the slightest closeness or disagreeable smell to one entering it from the fresh outer air; and this might serve as a fair test which any youth might apply practically to his own bedroom. Let him go out for a few minutes in the fresh air and return and test the air in his room: if this gives, on careful sniffing, a smell in the least degree unpleasant or close, he has been during the night as surely poisoning his blood as if he had been taking small doses of arsenic; and if he wishes to keep well he should provide a larger opening for the admission of fresh air the next night. Teach them not to fear abundance of night air, as it is called, flowing into their rooms constantly from an open window; providing the head of the bed be not opposite nor near to the window. In cold weather, it is true, more fuel or more bed clothing will necessarily be required, but for *perfect health* the demand for fresh air is imperative. In this connection I may refer to personal cleanliness. I have been in school rooms in this city, when it occurred to me at once that if all the pupils had been well washed, and their clothes well washed and changed often, the air would be less unpleasant, less impure. Some children carry around with them on their skin and in their clothes, for days and perhaps for weeks, the excreta of the skin, which is diffused more or less in the air around them, wherever they happen to be. With not a few children perhaps this one of personal cleanliness may be regarded as one of the principal points of hygiene. A maximum degree of this personal uncleanliness, which arises often from overcrowding, is believed to give rise to typhus fever. Enjoin therefore upon pupils the importance of frequent changing and washing and airing of the underclothing, and personal cleanliness—the frequent washing and indeed scrubbing of the surface of the body. It will be necessary to impress upon children the high value to be placed upon that essential of life and health, *sunlight*. Without sunlight there can be no good development, no good health.

A very important point I will briefly refer to, though it is more correctly a question of public health than of individual hygiene, is that of removing far away all excrete waste matter, even house or kitchen refuse and slops. Let children be taught that these things must not be put nor left in the back yard—one of the abominations of civilization—but put far away from reach of the sense of smell at least.

In this connection too I will refer to the subject of avoiding contagion. Much sickness and many deaths arise from contagious diseases, and these are very frequently spread through thoughtlessness. Children should be warned not to go near any one suffering, or who had been, within a period of two or three weeks' time, suffering from any contagious disease; and also not to spread such disease by themselves, when they are, or have recently been, suffering from such disease, going near others who are well.

On the subject of water, in teaching hygiene in schools, you cannot well do more than impress upon pupils the great importance of drinking only pure water; and that, when this is at all suspected, of drinking it only after it has been boiled and allowed to stand for a few minutes that impurities may subside.

There are several important points which come under the head of foods: The principal of these is, I think, that of *eating very slowly*, and masticating the food thoroughly. Teachers might explain the importance of these, and why they are absolutely indispensable to good digestion, and, consequently, to good health; and the necessity for dividing the food by the teeth into fine particles, and the thorough mixing of these with the saliva, which thus aids greatly the juices of the stomach in the digestion of the starchy principles, especially, of which vegetable foods largely consist. I might place as the principal point to be noticed under the head of foods, that of over-eating, were it not that slow eating and

thorough mastication help so greatly to prevent over-eating. Many are receiving the opinion that we all eat too much. Perhaps you all know the celebrated Dr. Abernethy's opinion on this :—that, on an average, of the food most people eat, one-fourth nourishes the body and the other three-fourths are taken at the risk of health and life. I have no doubt that the majority of people eat at least twice as much food as they require, and if they only eat half the usual amount they would have better health. Obviously it is only what is *digested* and *absorbed* and becomes a part of the circulating blood, and not necessarily what is eaten, which nourishes the body. What one eats over and above what the stomach will dissolve thoroughly, and the absorbents take up and carry into the nutrient blood, but over-taxes the excretory organs and injures the whole organism. The excess commonly gives rise to fermentations and acidity, and causes general illness. Medical men know very well that a large proportion of the cases of sickness in children is caused by stuffing.

But it must be borne in mind that it is not safe to at all suddenly reduce the quantity of food habitually consumed. The organs have become so accustomed, almost from birth, to dissolve and appropriate *only a portion* of the nutriment from the food which has been eaten, that they continue to use only a portion of the nutriment from the reduced quantity of food eaten, and hence too little nourishment is obtained. The quantity of food eaten must therefore be reduced slowly and gradually. And nothing helps more to secure moderation in eating, and the taking of only what is required by the system, than slow eating, and with this careful attention to the first feeling of *satisfaction*, not of satiety, while the thorough grinding of the food by the teeth, and the mixing with it of abundance of the saliva aids greatly the digestive functions. More food may thereby be thoroughly digested, and the organism is thereby soon better nourished ;—much better than if more food were eaten and only partially digested. To teach the value and consequences of eating slowly is therefore probably of the first importance in this connection. It is said that recently a well-to-do lady of leisure went to consult a celebrated London physician about her health : he looked at her furred tongue and observed other symptoms of dyspepsia from over-feeding, and said, "you must eat slower." She asked what he could do for her, if anything, and waited for a prescription. He simply looked very profound, made a gesture with his hand that he was done with her, and said, "eat slower." All she could do was to pay her two guineas for the two words, and to depart and profit by them—it is to be hoped she did so. One common cause of immoderation in eating is the too great variety of dishes served and partaken of at each meal. The smaller the number of dishes served at a meal the better. Variety may best be obtained by changes at the different meals.

There are a few who hardly eat enough food. From eating improper food or eating too fast, their digestive powers have become weak and imperfect, and they are badly nourished.

It is important that children be taught to eat only of plainly but well cooked and sound foods.

Of physical exercise I shall not here say much. It has been ordained that we must exercise to obtain food. Most children get exercise enough ; but the physical organization requires *systematic training* as well as the mind. I think an erect, graceful position should be enforced in school, in order to prevent unsymmetrical figures ; and some light gymnastic exercises are necessary. I am not clear as to what extent bodily position in schools receives attention.

I believe over-exertion is sometimes a consequence of rope jumping, running and leaping, etc. ; and these exercises should receive the teacher's attention. Another point in this connection, which demands notice, is that of cooling off too fast after exercise. Children not unfrequently get chilled and get an attack of inflammation in this way ; indeed it is a common cause of inflammation. One should never sit down, or sit for more than a few moments, not long enough to get even cool, after getting warmed by brisk exercise ; but move about a little and put on a woollen shawl or extra coat and get cooled gradually, and so prevent chilliness. This point is of much practical value.

Abundance of sleep is one of the most indispensable conditions of health, and it is probable that ambitious boys, and girls too, sometimes deprive themselves of it in order to take a leading part in their class. It is necessary to warn any such of the evil consequences of such a course. It is impossible to build up a good physical constitution and a good brain without sufficient sleep for the repair and renewal of the waste which has taken place during the exercise of the brain. It is only, you will bear in mind, during sleep that the brain gets rest and can be renewed. Nine or ten hours sleep is usually little enough for a growing school-boy or girl between nine or ten and fourteen years of age. Children should be taught to go to bed at an early hour in a well-ventilated room, and, with very few exceptions, be allowed to sleep as long as they are inclined to, or until they waken of themselves.

In reference to clothing, I believe it is almost if not quite universally conceded that woollen clothing is best at all seasons in our Canadian climate. More especially is woollen of the greatest value as an article to wear next the skin, though I know of some who cannot wear even the finest textures of it next the skin, on account of the irritation it produces, and are obliged to wear instead fine cotton, and woollen over it.

The underclothing, as I have said already, should be frequently changed, as it collects and retains the excreta, or waste matters, given off by the skin ; which soon become offensive to the sense of smell. It is not necessary that flannel underclothing be frequently washed ; frequent shaking and hanging in the sun and air with less frequent washing is sufficient. I am convinced it is better not to wear the flannel next the skin at night ; certainly the same garment should not be so worn that is worn during the day. If teachers would be a litte more outspoken to their pupils on these points, I believe the air in school rooms would be less disagreeable than it sometimes is.

The practice of unequal clothing, so common, is obviously injurious, and should be discouraged. The muffling of the neck and throat with large clouds and shawls is undoubtedly bad.

The wearing of tight clothing on any part, you all know, interferes with the function of the part, and is decidedly injurious and must be opposed.

Personal cleanliness and bathing, the last essential to health to be referred to, is not least in importance; and I have drawn attention to it in a somewhat indirect way in an earlier part of this paper, indeed more than once. Besides the frequent washing of the clothing, especially the underclothing, it is indispensable to give attention to the state of the skin and to urge the importance of a daily bath of some sort, in order to remove from the skin the excreta which is being constantly given off by it ; clogging the pores and preventing the escape of impure waste matters from the blood. Get the pupils to thoroughly understand the necessity for perfect cleanliness in this regaad—get them to practise daily bathing for a time, and I am sure the amount of comfort they will derive will be so great that there will be only a few who will not take kindly to it, and continue it. With a good warm water bath, with perhaps mild soap, once a week, a daily wash over the entire body with the hands, just as one washes the face, with brisk rubbing with a rather coarse towel after, is sufficient for the purpose of cleanliness, and should be religiously enjoined upon every pupil. I have now, I think, gone over the main points in hygiene which at the present

time are most essential to be taught in schools. In order, however, to make them more clear, I will briefly recapitulate.

First in importance is pure fresh air, always, at all times—not once in a while—to go *out* and get the fresh air, but *always*, indoors, if the health is to be good. In order to get this, free ventilation is absolutely necessary; in the *schools* and in *bed-rooms* especially. Allay any fears as to light draughts of fresh air. They will do less harm by far than still foul air. Decidedly stronger cold draughts should be avoided. It is possible to ventilate without perceptible or disagreeable draughts when sufficient cubic space per pupil is allowed, but with the present construction of most school rooms it is necessary to open windows or breathe poisoned air. With perfect personal cleanliness, the air is less rapidly fouled remember, and sunlight assists in purifying it. Enjoin the necessity of a removal to a safe distance of all waste excremental matters; and the avoidance of all persons affected with any contagious disease. Likewise, it is very important to impress upon pupils the necessity of themselves being thoroughly disinfected, by baths, &c., after being ill of any contagious disease, before mixing with others, in order that they may not communicate the disease to others.

Impress upon pupils the importance of drinking only pure water. The drinking of impure water, especially water from city wells, as a rule, is always attended with danger.

Encourage a practice of moderation in eating; which practice may be best acquired by eating very slowly and grinding the food well with the teeth, and by partaking, at each meal, of only one or two dishes—not much of a variety at each meal; while the food at the different meals may be varied to the taste, ever teaching pupils to bear in mind that it is what is digested and absorbed into the blood, and not necessarily what is eaten, which nourishes the body. I may observe here too that slow eating, after being practised for a little time, affords the greatest pleasure in eating. The pleasures of the table are thereby unquestionably increased rather than diminished.

Systematic exercise is necessary to good health, and good physical development. After active exercise or work, when the body is considerably heated, it is very important, very necessary, to put on an extra garment, or to move about moderately for a time, or both, in order to avoid chilliness; from which there is danger.

Full and sufficient rest, and abundant sleep, that there may be time for complete repair of all the organs of the body, especially of the brain, is very essential. It is only during *rest* that repairs take place; it is only during *sleep* that the brain gets *rest*.

Children should be taught not to wear tight clothing, nor unequal clothing; to change, and wash or expose to air and sunlight, underclothing frequently, and not to wear the same garment next the skin at night which is worn during the day. And finally they must be taught to "wash and be clean."

THE ADDITIONAL GRANT TO COLLEGIATE INSTITUTES.

The following paper on the above subject was read by Mr. A. Purslow, M.A., LL.B., Head Master of Port Hope High School, before the Head Masters' Section at the recent meeting of the Provincial Association.

The subject of which I gave notice at the meeting of this section last Convention was not, as has been advertised, 'Legislative aid to Secondary Education," but "The Additional Grant to Collegiate Institutes;" and although I think that this section owes it to itself, and to that field of secondary education which it represents, not to separate this year without taking up and discussing and giving forth no uncertain sound on the question of the maintenance of Upper Canada College out of Provincial funds, which in all justice and common sense should be distributed among the High Schools of the whole province; I nevertheless wish on the present occasion to confine your attention, as I shall my own, strictly to the subject of which I gave notice, and which was, as I have said, the additional grant of $750 annually to each Collegiate Institute.

You are doubtless as familiar as myself with the provisions of that rider to the High School Amendment Act of 1871 according to which this additional grant is *legally* made, yet for the sake of explicitness I venture to read them:

1. COLLEGIATE INSTITUTES AUTHORIZED.

98. And whereas it is desirable to encourage the establishment of superior classical schools, it shall be lawful for the Lieutenant-Governor to confer upon any High School in which not less than four masters are fully employed in teaching the subjects of the prescribed curriculum, and in which the daily average of male pupils studying the Latin or Greek language shall not be less than sixty, the name Collegiate Institute.

(*a*) Towards the support of such Collegiate Institute it shall be lawful for the Lieutenant-Governor to authorize the payment of an additional sum, at the the rate of and not exceeding seven hundred and fifty dollars per annum, out of moneys granted for this purpose.

(*b*) If in any year the daily average of pupils above described shall fall below sixty, or the number of masters be not less than four, the additional grant shall cease for that year.

(*c*) If the average shall continue to be less than sixty, or the number of masters less than four, for two successive years, the Institution shall forfeit the name and privileges of a Collegiate Institute, until restored by the Lieutenant-Governor under the conditions provided by this section. 34 V., c. 33, s. 41.

(*d*) The provisions of this Act relating to High Schools shall apply to Collegiate Institutes. 36 V., s. 74.

Let us examine the provisions of the section just cited. In the first place, according to it, of all the subjects taught in our High Schools, Latin and Greek are singled out and especially fostered. The question arises, why should these two be thus honored?

It is my humble opinion, that a system which singles out and fosters Latin and Greek, by paying out of the public funds, in addition to the ordinary grant, $750 annually to some high schools for teaching these subjects to a given number of boys, is only justifiable on the assumption that these particular branches of higher education are more valuable to the Province, *i.e.*, are more conducive to the intellectual or material welfare of the people, than any other branches of the High School programme. There are now thirteen such Collegiate Institutes, drawing collectively $9,750 annually. Will any one have the hardihood to aver that the Latin and Greek taught in these, *additional, mind you, to what they would teach as simple High Schools*, is worth nearly $10,000 a year to the Province! But it is preposterous that nearly one-ninth of the whole Legislative grant given in aid of 105 High Schools, should, for work such as this, be appropriated to thirteen of them.

In the second place, Latin must be taught to boys.

It will be conceded that the percentage of those who learn Latin or Greek for professional purposes is very small. These subjects are taught in schools, because of their supposed educational value. Now, on the assumption that the Province is benefited by having a knowledge of Latin and Greek disseminated, for purposes of intellectual training, among the population, it must be granted that it is equally benefited when this knowledge is imparted to girls as when imparted to boys. Where is the sense then of distinction in favor of boys?

In the third place, Latin must be taught to not less than 60 boys. On the assumption that for a High School to teach Latin to 60 boys is worth to the Province $750 a year, it must be worth a proportionate sum to the Province if Latin is taught to a less number than 60. Hence, unless there is some magic in this particular number, it follows that a High School which teaches Latin to thirty, forty or fifty, is as much entitled to an additional grant for the

amount of work of this sort which it does, as are Collegiate Institutes for teaching Latin to sixty or more.

In the fourth place, a High School Board, in order to secure the additional $750, must employ four *masters*. This is in keeping with the aforementioned preference shown to boys, it is not in keeping with the fact that a very large proportion, $\frac{3}{7}$ths of high school pupils, are girls. Every one will allow that for imparting to these a refinement of manner—springing from refinement of feeling—for inculcating by daily example that modesty and delicacy of thought and sentiment which are the greatest charm and ornament of the feminine character, a "mistress" is much better fitted than a "master." It will be allowed, too, that many lady teachers are the equals if not the superiors of "masters" in teaching several of the subjects of the High School programme. Then, surely, those High Board which, recognizing these facts, secure lady teachers thoroughly competent in both the respects mentioned, by paying as high salaries to them as Coll. Inst. Boards pay to some of their masters—such Boards we say should be deemed equally deserving of additional assistance. And yet a school which employs three masters and a lady teacher is not looked upon as providing what is requisite to obtain the additional grant; and this—though the three masters may be all graduates and the lady teacher booked a First A., while of the four masters which the law requires, three may hold only 3rd-class certificates. It must be owned by every one that the justice, common sense, and gallantry of this arrangement are all equally scant.

It may be said in answer to what I have advanced so far, that the Legislature is supreme and has a right to make what laws it likes. But I say that the Legislature has no right to make any law the working of which shall be attended with injustice ; and I now proceed to show the injustice of this law to the other High Schools concerned. I have already adverted to the fact that 13 high schools receive for the special service of having taught an indefinite and undefined amount of Latin to 60 boys $9,750 annually, or nearly $\frac{1}{6}$ of the total grant or fund, but not satisfied with this, the Legislature allows these favored schools to come back and take the lion's share of what remains ; that is, these schools are first given a lump sum of nearly the average for each high school, and then with the advantage this gift has conferred, they are allowed to compete with other high schools for the remainder. The bonus of $750 is the salary of an additional master. Is there any fairness, I ask, is there not the rankest injustice in giving to some schools the start of an additional Master, in appointing to other High Schools, and to them the carrying out of the self-same programme, and then to gauge the work of these favored schools by the same measure, and to pay for it on the same basis as is applied to the schools that are not so favored and that have not this start? The fact that these Institutes are almost without exception situated in populous centres, itself confers upon them an immense advantage in their competition with other schools, without the additional one of having a master given them by the Government. Other schools in less populous places are already heavily handicapped in the race by the more limited area from which they can draw pupils, and often by the less advanced attainments of these pupils when they enter. I am not blaming—I do not blame the Trustees or Head Master of Collegiate Institutes for availing themselves of this provision of the law, and for taking the money since they can get it; but as no good can come of perpetuating an injustice, would it not be better for them to be willing to throw this sum into the general fund, and for all High School authorities to unite in a vigorous petition to the Legislature for such an addition to the yearly appropriation for High School purposes as shall bear some proportion to the labor and expense they have of late years thrown off their worn shoulders on to those of High Schools.

After a discussion occupying the greater part of the morning, this question, as well as the wider one, "Legislative Aid to Secondary Education," was referred to a committee consisting of Messrs. Purslow, McMurchy, Oliver, Seath, Strang, Fessenden and McHenry, who were empowered to consider the matter and bring their united views to the notice of the Minister before the meeting of the Legislative Assembly.

RECENT GEOGRAPHICAL NOTES.

BY A "F.R.G.S."

From the last annual address of the Earl of Northbrook, President of the Royal Geographical Society, we learn to what extent geographical science and discovery have advanced during the last year. From this address we glean some interesting information which we now summarize.

The most important geographical event of the year was the discovery of the North East Passage along the coast of Europe to the Arctic Sea, by the Swedish explorer, Prof. (now Baron) Nordenskiold, in the ship *Vega*. The detail of this notable discovery was given in the April number of this *Journal*, page 7. Its commercial value will be the opening up of communication with the mouths of the Obi, Yenisei, and Lena Rivers, and thus greatly increase the facilities for commerce with Siberia and the northern part of Central Asia.

The next most interesting and important geographical explorations are those prosecuted in Africa with so much ardour by several European Governments. This activity dates back ten years, to the time when expeditions in search of the heroic Livingstone were undertaken. During the last year, England, France, Germany, Portugal and Belgium have either sent out or maintained exploring expeditions on this vast continent. Since Stanley's famous journey across the continent, no expedition has been more notable than the one conducted by Mr. Thompson, a young geologist, after the unexpected and lamented death of its youthful leader, Mr. Keith Johnston, and one undertaken through the same region by Mr. James Stewart, of the Livingstonian expedition mission on Lake Nyassa.

These expeditions traversed a hitherto unknown country, lying between the two great lakes of Nyassa and Tanganyika. After the death of Mr. Johnston, the first expedition penetrated four hundred miles further into the interior, until it reached the great central plateau in the heart of Africa, 6,700 feet high. The second started from a point on Lake Nyassa, twenty or thirty miles further south than that undertaken by Mr. Thompson, and reached Lake Tanganyika only a day after him. On the shore of this lake, Mr. Stewart secured fifteen sets of lunar observations. The value of these observations may be stated to be that they will enable geographers to fix the longitude of this important point in Central Africa, and greatly add to our exact geographical knowledge of the whole region of this hitherto *terra incognita*.

The object which the Belgian expedition has had in view is the establishment of centres of civilizing influences and commerce at various points in the African interior. One incidental advantage to science gained by this expedition is the preparation, by Dr. Dutrieux, of an excellent treatise on the endemic diseases of Eastern Africa, and the acclimation of Europeans in that region.

Energetic efforts are being made by the French Government to found a civilizing station at some favorable point in the western interior of the continent, in co-operation with the Belgian International Society.

Rev. Mr. Hare, of the London Missionary Society, has reported upon a district of great fertility and beauty, and well watered.

It has an inland sea, named Lukuga, stretching 400 miles in length, from north to south, through the heart of Africa. The Rev. C. T. Wilson, of the Church Missionary Society, has with his party made a remarkable journey from the noted Victoria Nyanza inland sea to Egypt, and has been enabled to aid in settling the vexed question of this inland sea being the principal source of the Nile. He found great obstacles in his passage down the river, owing to the dense growth of aquatic vegetation.

The interesting journey of Major Minto (the distinguished Portuguese traveller) across South-Central Africa, from Benguela to Natal, was completed last year, and promises to add largely to our stock of geographical and astronomical knowledge of that region. Nor are the labors of Mr. H. M. Stanley and various English and German missionaries to increase our knowledge of the "dark continent" less active than formerly. Their explorations and adventures are full of interest and value to the geographical world.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

EXAMINATION PAPERS.

The following Algebra paper will be found of about the same difficulty as those ordinarily set at the Intermediate and Second Class Teachers' Examinations:

1. If $(a+b+c+d)(a-b-c+d) = (a+b-c-d)(a-b+c-d)$, shew that $(a+b)d = (c+d)b$.

2. Simplify the expression

$$\frac{\sqrt{a+b}+\sqrt{a-b}}{\sqrt{a+b}-\sqrt{a-b}} - \frac{\sqrt{a+b}-\sqrt{a-b}}{\sqrt{a+b}+\sqrt{a-b}}.$$

Divide $a^2-b^2-c^2-2bc$ by $\frac{a+b+c}{a+b-c}$.

Find the sum of

$$\frac{x}{x^2-1} + \frac{x^2+x-1}{x^3-x^2+x-1} + \frac{x^2-x-1}{x^3+x^2+x+1} - \frac{x^3}{x^4-1}.$$

From your result infer the value of

$$\frac{a}{a^2-b^2} + \frac{a^2+ab-b^2}{a^3-a^2b+ab^2-b^3} + \frac{a^2-ab-b^2}{a^3+a^2b+ab^2+b^3} - \frac{a^3}{a^4-b^4}.$$

3. Two numbers whose sum is $2a^3$ are in the ratio of $a+b-\frac{ab}{a+b} : a-b+\frac{ab}{a-b}$ to each other. Find them.

4. If $k = x\sqrt{1+y^2}+y\sqrt{1+x^2}$, prove that $\sqrt{1+k^2} = xy+\sqrt{1+x^2}\sqrt{1+y^2}$.

5. Solve the equations—

(1) $\frac{3+2x}{1+2x} - \frac{5+2x}{7+2x} = 1 - \frac{4x^2-2}{4x^2+16x+7}$.

(2) $\sqrt{x^2-8x+31}+(x-4)^2 = 5$.

(3) $\frac{xy}{x+y} = \frac{1}{3}$, $\frac{xz}{x+z} = 1$, $\frac{yz}{y+z} = -1$.

6. Find all pairs of values of x and y that will make both expressions $x^2+xy-(a-b)^2$, $xy+y^2-4ab$ vanish.

7. Out of a cask containing 360 quarts of pure alcohol, a quantity is drawn off and replaced by water. Of the mixture a second quantity, 84 quarts more than the first, is drawn off and replaced by water. The cask now contains as much water as alcohol. Find how many quarts were taken out the first time. Shew that the problem has only one solution.

8. (1) Given a the sum of two quantities, and b their product, shew that θ in $\theta^2-a\theta+b=0$, represents either of the quantities.

(2) From $x^2+ax+b=0$ and $x^2+a'x+b'=0$, x being the same in both, obtain an expression not involving x.

Find the condition that the equations

$$x^3+ax^2+bx+c = 0$$
$$x^2+\alpha x+\beta = 0$$

may have a root in common.

9. (1) If $\frac{a}{b}$, $\frac{c}{d}$, $\frac{e}{f}$ be in descending order of magnitude, shew that

$$\frac{a+c+e}{b+d+f} > \frac{e}{f} \text{ and } < \frac{a}{b}.$$

(2) If a, b and x be positive quantities, and $a > b$, prove that

$$\frac{x+a}{\sqrt{x^2+a^2}} \gtrless \frac{x+b}{\sqrt{x^2+b^2}}, \text{ according as } x \gtrless \sqrt{ab}.$$

What if $a < b$?

The following, as far as it goes in the subject, is of the standard required in Honor Algebra from candidates for First Class Certificates:

1. (1) Find the whole number of permutations of n things, when each may occur once, twice, ... up to r times.

(2) There is a polygon of n sides, and such that a circle may be described to pass through any four consecutive points; how many different circles may be described, each of which passes through four angular points of the figure?

2. (1) If n be a positive integer, prove that

$$o = (n+1) - n.n+$$
$$+\overline{(n-1)}.\ \frac{n(n-1)}{\lfloor 2} - (n-2).\ \frac{n(n-1)(n-2)}{\lfloor 3} + \ldots\ldots\ldots$$

(2) Find the coefficient of x^5 in

$$(1-2x+3x^2-4x^3)^{-\frac{2}{3}}.$$

3. Establish the Exponential Theorem.

Deduce $\log_e(1+x) = x-\frac{x^2}{2}+\frac{x^3}{3}-\ldots\ldots$

By expanding $2\log_e(1-3x)$, and $\log_e(1-6x+9x^2)$,

Prove

$$\frac{1}{n.2^{n-1}} = \frac{1}{n} - \frac{1}{2^2} + \frac{n-3}{2^4\lfloor 2} - \frac{(n-4)(n-5)}{2^6\lfloor 3} + \ldots\ldots$$

4. Find the present value of an annuity to continue for n years, compound interest.

Find an expression for the monthly instalment to repay a loan of $1,000 in ten years, interest 8 per cent. per annum, payable half-yearly.

5. A building society has a mortgage to be paid off by a quarterly instalment of $100, which has 6 years and 5 months to run; obtain an expression for estimating its present value, interest 8 per cent. per annum, payable half-yearly.

6. (1) Any convergent is nearer to the continued fraction than any other fraction which has a smaller denominator than the convergent has.

(2) Prove

$$e = 2 + \frac{2}{2+}\ \frac{3}{3+}\ \frac{4}{4+}$$

7. Shew that a solution of $ax-by = c$ in positive integers can always be obtained, and thence obtain the general solution.

Find the nearest number to 1000 which on being divided by 13 leaves 7 remainder, and on being divided by 14 leaves 2 remainder.

8. (1) Find the general term of the series

$$1+5x+21x^2+85x^3+\ldots\ldots,$$

and the greatest value x may have that the series may be convergent.

(2) If $y = x+2x^2+3x^3$, shew that

$$x = y-2y^2+5y^3-10y^4-y^5+\ldots\ldots$$

9. If the terms of the series $u_0+u_1+u_2+\ldots\ldots$, be derived each from the former by the condition

$$u_{n+1} = \frac{1}{a+\frac{1}{a}-u_n}$$

$$u_n = \frac{a^{n+1}-a^{-(n+1)}}{a^{n+2}-a^{-(n+2)}}.$$

SOLUTIONS ASKED FOR.

1. A gentleman's servant having been asked to purchase 20 animals for \$20, brought home sheep at \$4.00, lambs at \$0.50, and kids at \$0.25 each. Required the number of each kind (solve by Alligation.) J. A., Antigonish.

2. The sides of a triangle ABC are 25, 30 and 35 feet respectively; on these sides external squares are described, $ACDE$, $ABKH$, $BCGF$; find the aggregate area of the squares described on GH, KD, EF.

3. Find contents of frustrum of a cone, diameter of larger end being $2\frac{1}{2}$ inches, of smaller 1 inch, and depth 5 inches.

M. F. Harrington, Downeyville.

4. Solve $x^2 + y^2 = 13$
$x^3 + y^3 = 35$.

F. G., Hastings.

5. A circular vessel, 6 inches deep, 12 inches in diameter at the bottom and 18 inches at the top, is filled with water and turned upon an axis through its centre. What must be the angular velocity of the vessel to empty it?

W. Bickell, Clyde.

The following solutions of problems in our July issue are by W. Bickell, of Clyde:

1. Let R = the reaction of the wall, and R_1 = the tension on the cord, and W represent the action of the weight.

$R = R_1$ since they are opposite and in equilibrium. Take moments about the lower end of the beam.

Then $R\times 15\sqrt{13} = W\times 4\frac{1}{2} = 112\times 4\frac{1}{2}$.

$$R = \frac{168}{5\sqrt{13}} = \frac{168\sqrt{13}}{65}, \text{ also} = R_1.$$

2. $2\frac{1}{4}$d. is the duty on the paper in the book. The manufacturer received $\frac{11}{10}$ of (cost + $2\frac{1}{4}$d.), and the publisher received $\frac{8}{9}$ of $\frac{11}{10}$ of (cost + $2\frac{1}{4}$d.); *i.e.*, he received $\frac{88}{90}$ of cost + $\frac{88}{90}$ of $2\frac{1}{4}$d.

∴ the price without the duty is $2\frac{97}{100}$ less than with the duty (provided the duty is excise.) Otherwise the duty would be paid by the publisher. Then the book would be $2\frac{7}{10}$d. less when there would be no duty.

3. $76\frac{2}{3}$ % of face value = cost. 100 % of face value, less \$80, = cash received.

∴ $23\frac{2}{3}$ % of face value less \$80 = \$520,

$23\frac{2}{3}$ " " = \$600,

100 " " $= \frac{600\times 300}{71} = \$2535\frac{15}{71}$.

4. Let ABC be the triangle; it is required to find a point D in AB, E in BC, and F in CA, such that $AD = AF$, $BD = BE$ and $CE = CF$. Bisect the angles at A, B and C; then the bisectors shall meet in the same point K. Draw KD, KE and KF perpendicular to AB, BC and CA respectively. Then $AF = AD$, $BE = BD$, and $CE = CF$.

In the triangles FKC and EKC the angles KFC, KCF are equal to KEC and KCE, also KC common; ∴ the triangles are equal in every respect. ∴ $CF = CE$ in the same manner AF may be shewn equal to AD and BD to BE.

Solutions of the same were also received from the following: of 1 from W. Cochran, Billings Bridge; of 1, 2 and 3 from M. F. Harrington, Downeyville. A correspondent informs us that solutions of 2 and 3 are given on pages 64 and 66 of the Key to Hamblin Smith's Arithmetic (Canadian Edition.)

John Moser, of Nashwaaksis, has sent the following solution of a problem on page 118 of May number, "A board, etc.": Let x = distance of dividing line from narrow end. Then from rule for finding area of a trapezium with parallel sides, since areas are equal.

$$x\,\frac{\frac{3x}{144}+6+6}{2} = (144-x)\,\frac{\frac{3x}{144}+6+9}{2}$$

or $x = 79$ nearly.

S. H. Parsons calls attention to a numerical error in July number, page 158, prob. 5. $1668\frac{88}{99}$ should be $1680\frac{40}{87}$, giving $79\frac{47}{87}$ for answer.

TO CORRESPONDENTS.

John Moser, Nashwaaksis.—In reference to your comment on the L. C. M., in the edition of Todhunter's large work (the only book we can lay our hands on just now), it is as it should be, and as you suggest,—"thus every common multiple of A, B and C is a common multiple of M and C." If in the work for beginners it is as you state, it should be changed.

SOLUTION OF AN EXAMINATION QUESTION.

To the Editor of the Canada School Journal.

Sir,—The following question, set for candidates for grade A or B at the last Provincial Examination in Nova Scotia, though it can be done in a second when one knows the rule, has puzzled, at least for a time, every one whom I have known to try it: "A can do B's day's work in $\frac{4}{9}$ the time in which B can do A's day's work; what is the relation of A's day's work to B's?" I offer the following solution:

1. Required fraction denotes the multiple of a day B requires in doing A's day's work.

2. Reciprocal of required fraction denotes the part of a day A requires in doing B's day's work.

3. Required fraction divided by its reciprocal = square of required fraction = relation of time B requires in doing A's day's work to time A requires in doing B's day's work = reciprocal of $\frac{4}{9} = \frac{2}{4}$.

4. Therefore square of required fraction = $\frac{2}{4}$, and therefore required fraction = square root of $\frac{2}{4} = \frac{3}{2}$.

The above solution suggests the following

Rule.—*Take the square root of the reciprocal of the given fraction.*

Joseph J. Parker.

Truro, N.S., June 9, 1880.

Practical Department.

HOW CHILDREN SHOULD BE TAUGHT TO READ.

MR. EDITOR,—Believing that no subject is so badly taught in the schools of Ontario as reading, I propose, with your permission, to conduct a discussion in your columns on the methods of teaching it with a view of learning which of them is the simplest and most philosophical. During the past two years I have had the honor of advocating at the Provincial Teachers' Convention, and at several County Conventions, a *self-consistent phonic system*; that is, a system which gives the child the *sounds* and *powers* of the letters at once, and at first gives it but ONE SOUND FOR EACH. During the past year, Professor Meiklejohn, of the University of St. Andrews, has published a little work, advocating precisely the same system. This *One Sound System* I purpose to expound and defend.

With reference to other systems of teaching reading, my position will be friendly to the various phonetic methods; respectful to a sentence method as an *introduction* to the process of learning to read; indifferent to the alphabetic method (if there can be such a thing), and decidedly antagonistic to the word method as understood and taught in Ontario.

I hope that every statement I make may be fairly criticized, and if necessary corrected. I desire to reach the truth, and I am quite willing to be hurt a little while climbing.

JAMES L. HUGHES, P. S. Inspector.

ARTICLE II.

ADDITIONAL OBJECTIONS TO THE PHONIC SYSTEM.

A correspondent has called my attention to what some authors of prominence regard as a fatal objection to the Phonic method. The authors named are Mr. Currie and Mr. Gill. The works of these gentlemen are too well known to need commendation from me. Did they need it, I am quite prepared to give it without stint. The positions held by these gentlemen, the former being Principal of the Church of Scotland Training School, Edinburgh, and the latter Professor in the Normal College, Cheltenham, prove them to be men of unusual ability and experience. But, however able their writings and exalted their positions, it must be remembered that no single head can contain all knowledge, and that no one man can so fully investigate all departments of school work as to be able to speak authoritatively in regard to each. In the case in point, it is perfectly clear that the opinion of neither gentleman should have any weight, as neither understands the first principle of the system he condemns. Their remarks fully prove this to be the case. Mr. Currie, after stating the objection, to which I replied in my last, that "the English Alphabet is irregular and confusing," goes on to say, "But to the extent to which the alphabet is regular, the Phonic method is liable to an objection of the same nature as that so often urged against the common (or Alphabetic) method, viz.: that *the aggregate of the sounds of the letters in a word does not naturally suggest the sound of the word itself*; an objection which, though not of much weight against a method not pretending to be phonic, is fatal in the case of one which does. According to the method in question, the pupil is expected to arrive at the sound of the word *bat*, for example, through this analysis bĕ-ă-tĕ (the two consonants being uttered upon a sound here denoted by ĕ, but which is in reality something like the *e* in French, or the *u* in *but*.) This threefold sound may be a nearer approach to the single sound *bat*, than the threefold bēē-ā-tēē of the alphabetic method; but it certainly does not constitute that sound. It fact it cannot: in the very first step of its attempt, it gives a distinct sound to the consonant *b*, a letter whose essential feature is that by itself it has no sound at all."

Mr. Gill, speaking of the phonic method, says, "Now it may be shown that such a method is nothing but a variety of the alphabetic method with other names to the letters. Accordingly we find, in the so-called phonic method, another vowel sound is attached to the consonant instead of the one when its name is given. Take the word *mat*; on the *name* method (alphabetic) this is em-a-tee; on the *phonic* it becomes um-ă-tĕ: *bat* becomes bĕ-ă-tĕ, or more frequently, bŭ-à-tŭ. Allowing, however, that these new names are a nearer approach to the sounds than the ordinary names, still there remains an objection fatal to its peculiar claims, namely, that it does not accomplish what it professes."

Now, there could be no fault found with the reasoning or the conclusions of the writers quoted, if there were any correctness in their premises. This is not the case, however. They have "called upon their imaginations for their facts." There could be no clearer case of misrepresenting a system in order to attack it. The misrepresentation in this case undoubtedly arises from a misconception of the real nature of the Phonic system. No teacher who knows anything of phonic analysis would teach his class to sound the elements in *mat* or *bat* as represented above. The three elements in each case would be uttered individually, so that when brought into one word and sounded in uninterrupted succession they would form the word required. It is incorrect to sound *b*, bĕ or bŭ; *m* ŭm: or *t*, tĕ or tŭ, In forming *b* and *m* with the vocal organs, no sound whatever should escape from the lips after they are opened. In both cases the lips are closed and a sound is formed which in the case of *b* continues only for an instant, and in the case of *m* flows out through the nostrils so long as the lips are kept closed. No sound of *m* or *b* escapes through the lips, hence it is simply ridiculous to represent these letters, as done by Mr. Currie and Mr. Gill. It is a bad mistake to *sound b* with any vowel sound following the opening of the lips; it is a greater error to *sound m* with any vowel sound preceding the closing of the lips. This may be incomprehensible to those who do not fully understand the vast difference between *naming* and *sounding* the consonants. In the case of *t*, it is utterly inexcusable to associate any vowel sound whatever with it in giving its power, or in what is technically called *sounding* it. It modifies *breath unvocalized*, and has by itself no sound.

There is a remarkable similarity in the quotations made above. In fact, so striking is their agreement that I am forced to the conclusion that one author must have accepted the conclusions of the other. Two men may be led to think out the same great truth independently; it is not often that two men independently discover the same great error, and dignify it with the garb of truth.

ADVANTAGES OF THE SELF-CONSISTENT PHONIC SYSTEM.

1. *Children are more intensely interested in what things do than in what they are called.* Young children care comparatively little about the names of animals. They name them according to the sounds they make. They call a dog *bow-wow*, a cat *meow*, and all the domestic animals by what they *say* instead of by their names.

Can this instinctive interest in what things do or *say* be utilized in teaching to read? It can be and is used in teaching by the phonic method. The teacher at once makes the distinction between what the letters *say* and what they are *named*. The late Professor Monroe justly regarded this as a most important distinction. He would begin by asking pupils about to be introduced to the alphabet: Have you a dog at home? *Yes, sir.* What is his name? *Watch.* What does he *say* when he speaks to you? *Bow-*

wow. Have you a cat? *Yes, sir*. What is its name? *Tom*. What does it *say*? *Meow*. So he would proceed with other illustrations to show his pupils clearly the distinction between the *name* of a thing and what it *says*. He would drill his class quickly for some time thus, His *name* is—? He *says*—? Its *name* is—? It *says*—? &c.

When the teacher has led his pupils to make this distinction he is ready to proceed to the letters. He places the letter P for instance on the blackboard, and says "This little fellow" has a *name*, pee. This information will interest them very little. What do they care about a mere mark which does not represent to them any thing or any principle, in which they naturally take an interest? They have been making gigantic strides in learning before coming to school; they have learned the names, properties, and relationships, of nearly everything they have ever seen, and without apparent effort. Why? Because everything interested them personally, and was linked to their nature either because it was a living, saying or growing thing; or because they could use it in some way or other for their amusement or benefit. What is there in that mark on the board to interest or attract them? They like to make marks, but every mark must represent to them a "form of life," that is, some real object. They make a row of marks and call them men; they draw a few crooked lines and call them a horse, or a house, or a tree. Adults may see no likeness to the object, but they do, and their imaginations give these rude marks reality and life. So if the marks which we call letters are to have any depth of interest to children, they must have associated with them a definite idea of life, or utility. Both these ideas are connected with the letters by the Phonic method. Having incidentally remarked that the *name* of the letter is *pee*, the teacher should tell his class that the "little fellow" always *says* the same thing, namely, what they do when blowing pieces of paper off their hands, if they close their lips before blowing.

In a similar way the names and powers of all the letters should be given. The names should be mentioned incidentally, the chief attention being given to the powers and sounds, or what the letters *say*. It is important that this form of phraseology be adopted, so that the *saying* may be associated with each letter, in order to give it a sort of personality in the mind of the child.

Some writers argue that it is monstrous to set poor little children practising at the sounds of the 26 letters, because they have never heard and never will hear such peculiar sounds outside the school-room. To this, two answers may be given: 1. Novelty may be very desirable, and most school-rooms would be improved by it; certainly the child's interest in learning the sounds will be much greater on account of the novelty; 2. If the idea of *saying* be associated with each letter, the pupils will learn both the *sounds* and *names* more rapidly than the names alone. Why is it that a child who learns the names of 26 fellow-pupils in a single day, will require months to learn the names of an equal number of letters? "Oh, it is so much easier to remember names of children than names of letters," many will answer. This reply is totally incorrect. The pupils' names are more difficult to remember than those of the letters, but they are remembered because the pupil learns them in a natural way. He came in contact with 26 living, moving, speaking, shouting, playing things in whom he was intensely interested, and whose names were learned *incidentally* and not as a *set* lesson. So the teacher should, as above stated, direct special attention to what the letters say, and give the *names* in passing. It was in this way that the pupil learned names at home, and he knew before entering school the names of nearly everything animate or inanimate which he had ever seen, without ever having a single set lesson on names. The absurdity of giving lessons on *names* is reserved for the school-room. There the deadening process is practised to a frightful extent; and let it be remembered that the *naming* of lists of words is only slightly less ridiculous than the *naming* of lists of letters.

There will doubtless be many, both of the advocates and opponents of the Phonic system, who will object to allowing the pupils to learn the names of the letters at all until they have learned their powers—until, in fact, they require to know them for oral spelling. This I believe to be a mistake, both for the sake of expediency and principle, because (1) many children have already learned the names of the letters before coming to school; (2) there is really no effort required to remember the names of things when they are learned practically in conjunction with their uses; (3) the names will be useful to the teacher in calling attention to particular letters after the pupils have left their self-consistent primers and entered upon the irregularities of the language.

There is no danger of any confusion arising in the minds of the pupils in regard to the names and sounds of the letters if the sound has been given in each case as what the letter *says*. The name of a thing is clearly distinguished from its use even by children.

2. *It makes the pupil an independent worker in the process of learning to read.* From the very first the pupil can make out the words for himself. If the tablets and primer are properly arranged, he never needs to be *told* the name of a single word. The teacher merely gives him the tools with which he is to *work* his way through the book. The alphabet learned phonically is a universal key which unlocks every difficulty for him. Step by step he marches on, growing stronger every day. He is not a mere imitator, while learning to recognize words; he does not simply repeat the name of a certain combination of letters after his teacher in a parrot-like way until he remembers it; he discovers for himself the sound of every new word he meets. This makes learning to read an intensely interesting work, in which the pupil is constantly passing from triumph to triumph. He learns to depend on himself and to use the powers which the school ought to develop, but which by its improper methods it so often dwarfs.

3. *Knowledge is used as soon as it is acquired.* The day has gone past, when it would be regarded as good teaching to compel pupils to learn the whole multiplication table before putting any part of it to practical use. The same is true of the antiquated methods of teaching all the rules in grammar, or all the definitions in geography before proceeding to the real, objective parts of these studies. It is almost incomprehensible that so many men and women yet teach the names of twenty-six letters before giving their pupils the slightest reason to believe that they can ever be anything to them but so many useless black marks. Thousands of pupils are stupefied every year by this blighting process, who never recover fully the acuteness and activity of their faculties. The phonic system, properly taught, gives the powers of only two letters before the child is set to form words from them. Thus two of the most important of the fundamental principles of education are satisfied: (1) The child applies his knowledge as soon as he gains it, instead of merely stowing it away in a garret; (2) He learns by doing. An apprentice learns how to use a tool by using it, and a pupil learns the function of a letter by combining it, and sounding it when in combination. Thus the seeds of knowledge acquired are made to germinate and produce greater knowledge. Too often they are placed in a granary and allowed to remain there.

It may be claimed that the *look and say* method utilizes knowledge as soon as it is obtained. This is true to a limited extent, and with this essential difference. The *look and say* method uses knowledge for recognition of known words when they are repeated,

the *phonic* uses what has been learned in the acquisition of additional knowledge. The one is a simple effort of recognition, the other is a productive, and developing exercise of power guided by experience.

4. *The pupil uses his reasoning and constructive faculties in learning to read by this method.* He does this in addition to using all the faculties called into action by any other system. The importance of this can not be over-estimated, as it renders the work of learning to read a developing process. The mind is enlarged by the "productive activity" required of it while deciding the names of new words.

5. *Pupils learn to spell better than if taught by other systems.* There are two reasons for this: 1. The ear is associated with the eye, and is of service so far as the irregularities will allow. Of course this is only to a limited extent. 2. The Phonic, more than any other system, secures accurate inspection of words while reading. Concentrated attention to the literal formation of words when reading, is the only means by which good spelling can be absolutely acquired.

6. *It secures distinct articulation.* Clearness of speech results from giving to each of the letters, especially the consonants, their full sound or power. The Phonic system is the only one which pretends to give the pupil any assistance in obtaining a clear utterance in addition to what he may gain by imitation. It is quite true that if pupils always have good models they will unconsciously imitate them, but the ear training of the Phonic system greatly aids the pupils in detecting the nice points of articulation. The great majority of men and women do not perceive the fact, when they hear a word pronounced in a manner entirely different from the way in which they are accustomed to pronounce it themselves. They continue to mispronounce words which they hear pronounced correctly every day, because they lack ear cultivation.

7. *It aids in removing provincialisms.* Every teacher who has tried to make an English pupil use *h* correctly knows how he will continue to misplace it, however clearly the teacher may speak words for him. "Say *oats* and *hay*," says the teacher for the fiftieth time; "*hoats* and *'ay*," blandly responds the pupil. This is a fair illustration of the results of attempts to cure provincialisms by imitation alone. There must be systematic ear cultivation and careful practice in the proper arrangement of the vocal organs in order to secure purity of speech. These requisites are secured by the Phonic system alone.

PRACTICAL WORK OF THE SCHOOL-ROOM.

1. *Should a teacher make special preparation of the lesson for each recitation?* Unless the teacher is perfectly familiar with the lesson and its bearings, so far as they ought to be presented to the class, and beyond that he should make special preparation for each recitation; I say beyond that, because to teach a lesson well one should know a good deal more of it than the lesson contains. He ought to have a reserve fund of information on it. A teacher should be so well prepared with each lesson, that were he called upon to recite it he would be able to do so better than the best pupil in the class. He should make such special preparation for the following reasons:

It will inspire him with self-confidence; and that is essential here as it is in every undertaking. It will enable him to "*know* what he knows, and to know what he *doesn't* know." A lack of confidence on the part of the teacher will beget a corresponding lack of confidence in him on the part of the pupils. He should feel and prove himself to be master of the occasion—always and without any airs or attempts at display. It is possible, and even probable, for a teacher to be confident of his ability to teach a lesson and yet not be able to do so; but such ill-grounded confidence will soon be discovered, and result disastrously to the teacher.

If the teacher is well prepared, the pupils will have confidence in his ability as a teacher and scholar, and *vice versa*. A teacher's promptness and accuracy will be a rebuke to indifference on the part of the pupils. If a teacher fails to make this impression, fails to give his pupils good reasons for believing and trusting in his superior wisdom, he fails utterly. Should he hesitate too frequently, or fail to answer a question, or solve a problem contained in the lesson, the pupils may put the worst possible construction upon it; and thus, by want of proper preparation, the teacher falls in the estimation of his pupils.

It saves time. When a teacher has the lesson on the end of his tongue, he can give his whole attention to the management of the recitation. Our periods of recitation vary from ten to thirty minutes, and we find this rather too short than too long. This time belongs to the class. Facts, illustrations, apparatus for experiments, should all be at hand when the recitation begins, so that the teacher need not spend from one to ten minutes in a "still hunt" for an answer to a question, or in thinking out a problem, or in looking up apparatus. The thinking must be done before the recitation hour arrives. The most unfavorable place and time for a teacher to study is in the presence of his class during a recitation. Those who put it off until then, do so at their peril. Besides, if the teacher is prepared, he wastes no time in circumlocution, and there is no time lost in guessing and in senseless debate by the class.

He should make special preparation to avoid teaching errors. I have known teachers to teach positive errors, errors of facts, errors of inference, errors of pronounciation, etc., just because they neglected to prepare the lesson. Sometimes teachers will take a false position in reference to something in the lesson, and, unwilling to yield to the criticism of the class, will maintain that position, even in the teeth of the text. This is very unfortunate, and would be avoided by special preparation.

The teacher's example should be an inspiration to his pupils. We would do well to keep in mind this old-fashioned maxim, that we teach by example, green to our memories. Pupils, knowingly or otherwise, learn to do, to a great extent, as their teacher does. If the teacher is habitually ready, accurate and careful in expression, some of his pupils will want to be so too. Show me a class habitually inaccurate, unready, and slovenly in expression, and I will show you a teacher who makes no special effort to train them.

A teacher should make special preparation for his own profit. We are forming *habits* of study. As we do from day to day, so will we get into the habit of doing. Habit, noiselessly and unconsciously, is forging her chain around us. Before we are aware of it we are in her iron grasp. By carefully preparing each lesson, a correct habit of study is formed, then the tighter and stronger the chain the better. This habit established, knowledge becomes more available, and the teacher is enabled to make constant advances in the attractive and ever-widening areas of thought and knowledge.

2. *Should this preparation include the method of conducting it?* I think that the teacher should decide upon the plan before the recitation begins. Where there is but one method of recitation, where the plan is unalterably fixed, there is no necessity for any preparatory thought as to method. The pupils know just *what* will come, *how* it will come, and when their turn will come, and what's the use in breaking in upon such delightful uniformity? But it ought not to be so. No one method should be exclusively adhered to, because it begets monotony and indifference. Methods should change too, to, suit the lesson. Some lessons can be taught better by one method than another. The catechetical method is sometimes to be preferred to the topical, the written sometimes to the oral, etc. Since methods should change, the plan to be pursued at any recitation should be determined beforehand. The method having been selected, the teacher knows just what apparatus to get ready, what to tell his pupils to do in the way of preparation, so that there will be no bother at the time of recitation about pens, paper, books, slates, pencils, etc.

3. *To what extent should a teacher use a text-book in recitation?* The principle is, to use the text-book as little as possible. It would be better, were it possible, to use no book at all during recitation. The text-book hampers the teacher in proportion to his dependence upon it. The manuscript hinders the speaker. I could speak with more ease to myself, and probably with more satisfaction to you, could I dispense with this manuscript; but most teachers have neither the time nor the talent to memorize everything they have to communicate. There is, therefore, to be some use made of helps, in the shape of text-books or their equivalents.

I find it difficult to make a general rule on this subject, but I should think that the text-book is to be used by the teacher during recitation, in those branches in which it is necessary for the exact

words of the text to be repeated by the teacher or pupil. But even this is to be so limited as to exclude the text-book for definitions and principles, as they ordinarily occur in teaching. To be more precise, the teacher should use the text-book for the "*exercises*," in the application of the principles in the various branches taught; for mathematical problems (not geometrical theorems), map questions in geography, orthography, etymology, so far as the words are concerned, and in reading, whether English or some other language.

I do not wish to be understood either as *limiting* the teacher to the use of the text in any branch of study, or of attempting to *exhaust* the text on every subject. But teachers, like men in the other professions, do not always control circumstances, and hence cannot always be thoroughly prepared with every lesson, and so, sometimes, like the others referred to, when the crucial moment comes, the vision is obscured, and the memory a blank. In such cases I should fly for refuge to the text-book. Is it not better for the teacher to use text-books than to *fizzle*, or blunder, or fail outright? Above all, teachers should be accurate, and therefore, while the use of the text-books should be reduced to the minimum, they should be at hand for an emergency.—*Pennsylvania School Journal.*

THE GEOGRAPHY CLASS.

Two leaders are chosen, who each select in turn until all the players are taken, and are formed in two lines facing each other, a chair for each being placed behind him. The leader on one side calls out some letter, and says, "Sea," or mentions some other body of water. The leader on the other side immediately names one beginning with the letter, and each one on his side gives another in rapid succession. If there is a pause, the leader of side No. 1 counts ten rapidly, and calls "Next;" the player who stands next answers, and the one who missed takes his seat. If a mistake is made by giving a wrong name to the piece of water called for, as by calling a river by the name of a sea or isthmus, or by giving the wrong letter as its first one, and it is not corrected by some member of the same side before the leader of the opposite side calls out "Miss," then all of side No. 2 must take their seats, which counts two for side No. 1.

The leader of side No. 2 requests all on his side to again stand in line, with the exception of those who missed, and calls out some piece of land, as mountain, State, county, etc., and a letter, which the opposite answer in the same way, and if every one succeeds in answering to the call, and each one gives a correct reply without mistake, they score three for their own side. The game is won by the side that first scores ten; and as all who have missed must keep their seats until the end of the play, they have abundant opportunity for laughing at the mistakes which are made by their friends. If it should happen that the leader of one side has no one to call upon to stand in line, he is obliged to answer alone; and if he also fails, the victory belongs to the other, even if they have not scored ten.

Another game of geography is played by each person taking pencil and paper, and in a given time—say, five minutes—writing as many geographical names, beginning with a certain letter, as he can remember. When "time" is called, a player reads his list, and any name that he has, and the others have not, counts as many for him as there are players besides himself. Each then reads his list in turn, and the one who scores the greatest number, when all have read, wins the game. If during the reading any name is challenged, and the writer is unable to describe it, if it be a river, sea, bay, etc., or locate it if it is a city, town or cape, every other player counts one.—*Harper's Young People.*

MORAL TRAINING.

John Bright heartily believes—like every other good and manly man—that moral teaching is as much a part of education as the three R's. "Education," he said the other day, "is not even classics and mathematics, of which in my day, when I was young, I knew nothing, and of which I have not acquired any knowledge since. I regard what are called classics, that is, the ancient languages of Greece and Rome, as rather luxuries than anything else. I do not myself believe that there is anything in the way of wisdom which is to be attained in any of the books of the old languages which at this moment may not be equally attained in books of our own literature. Therefore, I think a man may be as great, as good, and as wise a man, knowing only his own language and the wisdom that is enshrined in it, as if he knew all the Latin and Greek books that have ever been written. I think, with regard to teachers, that they have two entirely different branches of labor. They have that of instructing their pupils from books, and they have that of instructing them from their own conduct and their own manners. You want to teach a child to be gentle— and I must say that is better than book learning—not that gentleness that is weakness, for there is perfect gentleness which is combined with great force. You want gentleness, you want humanity. Humanity to animals is one point. If I were a teacher of a school I would make it a very important part of my business to imbue every boy and girl with the duty of being kind to all animals. It is impossible to say how much evil there is in the world from the barbarity and unkindness which people show to what we call the inferior creatures. Then there is the quality of unselfishness. Selfishness in families is the cause of misery and the cause of great injustice. Unselfishness and a love of justice—these are qualities which come if you offer them to the young person's mind. Their very nature makes them that they cannot receive it except with liking and approbation. And I have no doubt that it is possible for the teachers in the elementary schools of Birmingham, during the next ten years or so, during which they will have two or three generations of children under their care, so to impress their minds on these subjects that twenty years hence it will be seen and felt over the whole town that there is an improvement in these respects in the general population. (Applause.) These are things which I think it behooves the teachers in these schools to bear in mind. They cannot possibly have too high a sense of the responsibilities of their position and of their duties."—*Tribune.*

JUNE EXAMINATION, 1880.

ADMISSION TO HIGH SCHOOLS.

ARITHMETIC.

TIME—TWO HOURS.

Examiner—J. A. McLELLAN, LL.D.

Values.

10 1. Multiply one hundred and seventy-four millions five hundred and fifty thousand six hundred and thirteen by six hundred thousand four hundred and seventeen. Explain why each partial product is removed one place to the left.

10 2. Define *measure*, *common measure*, and *greatest common measure*.

Find the G. C. M. of 153517 and 7389501522.

10 3. Shew that $\frac{2}{3} = \frac{8}{12}$.

Simplify $\dfrac{4\frac{11}{13} \text{ of } \frac{8}{15} \text{ of } 7\frac{3}{7}}{12\frac{1}{35} - 2\frac{3}{7}} + \dfrac{2\frac{1}{3} + 1\frac{35}{48}}{9\frac{3}{7} - 3\frac{39}{112}} - \dfrac{12354}{12355}$.

10 4. A brick wall is to be built 90 feet long, 17 feet high, and 4 feet thick; each brick is 9 inches long, $4\frac{1}{2}$ inches wide and $2\frac{1}{2}$ inches thick. How many bricks will be required?

10 5. A merchant received a case of goods invoiced as follows:—

12 pieces of silk, each 48 yards, at 5s. 3d. per yard.
15 " cotton, each 60 yards, at $6\frac{1}{2}$d. "
20 " " each 56 yards, at $4\frac{3}{4}$d. "
14 " Irish linen, each 40 yards, at 1s. $3\frac{1}{2}$d. per yd.

Supposing the shilling to be worth $24\frac{1}{3}$ cents, find the amount of the above bill of goods.

10 6. Divide 76.391955 by nine hundred and twenty thousand three hundred and eighty-five *ten-billionths*.

10. 7. D. D. Wilson, of Seaforth, exported last year 8360 barrels of eggs, each containing the same number. He received an average price of 14.85 cents per dozen. Allowing the cost (including packing, &c.) to have been 13.5 cents per

dozen, and the entire profit to have been $7900.20, find the number of eggs packed in each barrel.

10 8. The dimensions of the *Globe* newspaper are 50 inches by 82 inches, and the daily issue is about 24,000 copies, how many miles of Yonge street, which is about 70 feet wide, might be covered with ten weeks' issue?

10 9. A flagstaff 120 feet high was broken off by the wind, and it was found that ·76 of the longer part was $\frac{2}{5}$ of $9\frac{1}{2}$ times the shorter part. Find the length of each part.

10 *A* and *B* together can do a piece of work in $\frac{3}{4}$ of a day, *B* and *C* in $\frac{8}{15}$ of a day, and *C* and *A* in $1\frac{1}{3}$ of a day. In what time could all working together do the work?

ENGLISH GRAMMAR.

TIME—TWO HOURS.

Examiner—JAMES HUGHES.

Values.

42 1. Parse—"The stranger trod upon alabaster slabs, each bearing an inscription recording the titles, genealogy, and achievements of the great king."

12 2. Analyze—"He who entered them might thus read the history, and learn the glory and triumphs of the nation."

12 3. (*a*) Define four classes of Pronouns, and give an example of each class.

8+4 (*b*) Decline *He* in both numbers.

15 4. Correct the following, if necessary, giving your reasons for making the changes:—

(*a*) It could not have been her.
(*b*) You are stronger than me.
(*c*) I cannot work like you.
(*d*) My friends approve my decision, especially them who are best acquainted with the circumstances.
(*e*) I do not know neither how it was done nor who done it.

10 5. (*a*) What nouns form their plural by adding *es* to the

4+6 singular.

(*b*) Write the *possessive plural of lady, orphan, mechanic.*

9 6. Write the *third singular* form of *to see* in each tense in the indicative mood.

GEOGRAPHY.

TIME—ONE HOUR AND A HALF.

Examiner—J. J. TILLEY.

Values.

8 Define Watershed, Frith, Delta, Horizon, Axis of the Earth, Polar Circles, Ecliptic, First Meridian.

9 2. (*a*) Why are the days longer in Summer than they are in Winter in the Northern Hemisphere?

(*b*) What causes the change of seasons?

(*c*) Why does the sun appear to rise in the East?

15 3. Trace the following rivers from their rise to their outlet, and name the principal cities on their banks:—Danube, Rhine, Ganges, St. Lawrence, Mississippi.

9 4. Name the cities of Ontario, and give the situation of each.

10 5. Over what railroads would you pass in going (i.) from Hamilton to Peterboro'; (ii.) from Collingwood to London?

12 6. What are the chief natural productions of Manitoba, Nova Scotia, Southern States of America, France, China?

9 7. Where are the following:—Islands—Malta, Anticosti, Ceylon? Capes—Verde, Comorin, La Hogue? Bays—Verte, All Saints, Table?

COMPOSITION.

TIME—ONE HOUR AND A QUARTER.

Examiner—J. C. GLASHAN.

Values.

12 1. Insert the necessary punctuation marks and correct the spelling in—

A little way below the great fall the river is comparatively speking so tranquil that a ferry-boat plies between the canada and american shores for the convenience of travellers when i first crossed the heaving flood tossed about the skiff with a violence that seemed very alarming but as soon as we gained the middle of the river my attention was altogether engaged by the surpassing grandeur of the scene before me i was now within the area of a semi-circle of cataracts more than three thousand feet in extent and floated on the surface of a gulf raging fathomless and interminable majestic cliffs splendid rainbows lofty trees and columns of spray were the gorgeous decorations of this theatre of wonders.

18 2. Render into good English—

The owl conceals itself by day in the recesses of ivy-clad ruins. He conceals itself in the hollows of old trees. It conceals itself in barns. It conceals itself in haylofts. Towards twilight it quits its perch. Towards twilight it takes a regular circuit around the fields. It skims along the ground in quest of mice. It skims along the ground in quest of rats. It skims along in quest of moles, shrews, and large insects. It seizes its prey. It returns with it in its claws. The owl is of great utility. It destroys an enormous quantity of mice. It destroys an enormous quantity of other vermin. These would otherwise do incredible damage.

9×4 3. Improve the following sentences:—

Napoleon gained a great lot of battles before his career was finished.
I shall be much obliged if you would do so.
We arrived about the middle of the day in Toronto.
You are not the boy whom I promised to give it to.
A virtuous and pious life will prove the best preparation for immortality and death.
All the money was spent by my brother which you gave me.

18. 4. Write at least twelve lines on *The Magna Charta.*

Outline.—The tyranny and rapacity of John; the Barons determine to vindicate their rights; Magna Charta drawn up; its chief provisions; John refuses to grant it; London is seized by the nobles; the King reluctantly signs the document; persuades the Pope to annul the charter; traverses the kingdom with hired mercenaries, laying it waste with fire and sword; his sudden death relieves the nation.

Notes and News.

ONTARIO.

The Degree of Bachelor in Divinity has been conferred on the Rev. Cyprian W. Pinkham, Chief Superintendent of Education (Protestant), Manitoba.

Professor Hutton, recently appointed Professor in Classics, and Mr. Vines, Classical Tutor, have commenced their respective duties in Toronto University.

No better appointment has ever been made in this country in connection with educational work than the recent elevation of Dr. Daniel Wilson to the Presidency of the University College, Toronto.

The Public School Board at Port Hope are about to introduce the half-time system into their schools for a while, to give an opportunity of testing its merits.

In the Collingwood Collegiate Institute fifty-nine candidates passed at the recent Intermediate examination—not thirty-six, as previously reported. Of these, four passed in grade A., twenty-three in grade B., and thirty-two in grade C. Of the second-class candidates only one had previously passed, who now has obtained a C.

Vienna High School passed five candidates, namely, one in grade A. and four in B.

One pupil passed in Omemee High School and obtained grade A.

In the Newcastle High School four candidates were successful; one secured grade A., two took grade B., and one Intermediate.

Twenty-eight candidates were sent up from Elora High School. Of these, fifteen passed, one in grade A., ten in grade B., and four Intermediates.

In the Strathroy High School twenty-two candidates passed the July Intermediate examination. One student from this school passed a very creditable examination at the junior matriculation, Toronto University, this year; one obtained second-class honors in Mathematics, and one second-class in English, on first year examination. In third year examination, one student won a scholarship in modern languages; and in fourth year examination, Victoria University, one student won two scholarships.

Beamsville High School was successful in passing five candidates, namely, two in A., two in B, and two Intermediate. They were all pupils of the school.

NOTE.—An old subscriber is anxious to obtain the numbers of the CANADA SCHOOL JOURNAL for July 1877 and January 1878. He will pay a moderate sum. Any of our readers who can spare them will please communicate with us.

The Chatham District Teachers' Association has an attractive programme for Friday and Saturday, 8th and 9th inst. A literary entertainment, consisting of readings and short addresses by several members of the Association, and other friends of education, will be held in the Town Hall on Friday evening All interested in the advancement of education are cordially invited to attend the meetings of the Association. The subjects to be brought forward are to be open to general discussion.

Last week, when visiting the High School, Port Hope, we noticed that an excellent plan is adopted, and one that commends itself for adoption in similar schools, namely, having on the walls, neatly painted, the names of those students who have graduated from the school, taking honors in some of the Universities. Among those we observed to occupy high positions in the list were the names of some of our most prominent business and professional men in Toronto, and, heading the list, we particularly noticed the names of T. Dixon Craig, Merchant, and Prof. Galbraith of the School of Technology.

The semi-annual meeting of the South Grey Teachers' Association is to be held in Durham on Thursday and Friday, 7th and 8th inst. The programme shows that some good, practical subjects will be presented; besides which, the best methods of teaching arithmetic, reading, and geography will be illustrated with classes, by Misses Corry and Armstrong, and Messrs. Jones and Blagbourne. On Thursday evening a suitable entertainment will be provided.

The programme for East Kent Teachers' Association, to be held in Ridgetown on Friday and Saturday, 15th and 16th inst., presents many good features. A re-union will be given on Friday evening, at which readings, essays, vocal and instrumental music, will form part of the entertainment.

At the Grenville Teachers' Association, to be held in the High School, Prescott, on Thursday and Friday, 14th and 15th inst., Dr. J. A. McLellan, M.A., will be present, and contribute a paper on "Arithmetic" the first day, and lecture same evening in the Town Hall on "Education." The next day he will take up the subject "Algebra" or "Euclid," and give an address to teachers. The other subjects in the programme are extremely interesting.

Dr. McLellan also takes part in the proceedings of the Prince Edward Convention, which meets at Picton, on 29th and 30th inst., and will deliver a lecture on "National Education" in the Town Hall, the evening of the 29th. Friends of education are cordially invited.

G. W. Ross, Esq., M.P., has signified his intention of taking part in the exercises of the West Huron Teachers' Association, to meet at Goderich on the 8th and 9th inst., and also to give an address at the public meeting to be held in the Temperance Hall, on the evening of the first day of meeting.

From the Lucknow Public School, three candidates passed at the late Intermediate Examination; two of whom obtained Grade A, and one B.

It pays to get the best teachers to take charge of our schools; for example: In consequence of the admirable system of classification and the thoroughness with which the pupils are prepared in the public schools of Port Hope, under the charge of Mr. Goggin, one form is dispensed with in the High School, thus doing more efficient school work, and saving the expense of an additional teacher in the High School.

On the 15th and 16th inst. the Wentworth Teachers' Association meets at Hamilton. G. W. Ross Esq., M. P. will attend and give an address the first evening, and examine a Model School class the next day. Vocal and instrumental music will be furnished to enliven the proceedings.

At Napanee, on the 15th and 16th inst., the Teachers' Association of Lennox and Addington will meet. The programme is well filled with very practical subjects; and on the evening of the first day of meeting Professor G. W. S. Wright, M.A., of Albert College, Belleville, will lecture on History. Music will enliven the proceedings.

The Wellington District Methodist Church has founded a scholarship worth $25.

In the Galt Coll. Inst., Mr R. Murray, of Rodgerville, has been appointed assistant teacher.

It is stated that an effort was made to discontinue the Model School, Stratford; but public feeling being adverse to the matter, the school continues.

The hon. the Minister of Education formally opened the new High School, Listowel, a short time since.

Two ladies who have gone through the regular school course and won high honors, applied for matriculation at the recent examination, New Brunswick University.

The prize of $100 offered by Archbishop Lynch to the first person of the R. C. faith who should obtain a first class, grade A, certificate, has been won by Miss Catharine Ballantine, a teacher in Stratford. She also secures a supplementary prize of $100 offered by Rev. Father Stafford, Lindsay.

Mr. T. A. Riddell has been appointed Principal of the Public School, Prescott.

The Chair of Political Economy and English Literature in Acadia College, Halifax, N. S., has been filled by Dr. Sherman.

The accommodation of the Ottawa Model School is not sufficient for the numbers who are applying for admission.

One of the successful candidates in the class lists of Cambridge University, England, this year, is Miss Helen Gladstone, daughter of the Premier.

A singular Convention has recently been held in Cincinnati. It is that of deaf mutes, of whom there has been a fair attendance from different parts of the United States, and even from Canada. Of course, their proceedings were carried on by writing and signs. It has not transpired whether any present were distinguished for their display of "silent eloquence."

In connection with several of the schools in England, the system of penny savings banks has been established with much success. The project has worked with great advantage on the Continent, where it seems to influence the national character in producing thrifty, frugal habits.

NOVA SCOTIA.

The Teachers' Association for the counties of King's and Hants (Inspectoral District No. 5.) met at Kentville, King's County, on the 23rd ult., under the presidency of Inspector Roscoe. U. G. Parsons Esq., A.B., was elected Vice-President, G. F. Miller, Esq., Secretary, and Messrs. H. Elliott, F. Rand, Thomas and Newcourt, committee of management. About ninety teachers were present. and the proceedings of the Association, which attracted the friends of education in goodly numbers, were characterized throughout by great earnestness. The President's opening remarks gave an excellent tone to the Association. The first paper, on "The Teacher's Duties," by Mr. C. F. Rockwell, was well received and its subject heartily discussed by Messrs. Robinson, Rand, Parsons, Sanford, Pines, Shafner, Griffin, and the President. Mr. Miller (Secretary) followed with a very suggestive treatment of the theme "Prizes and Punishments." The discussion which ensued was exceedingly spirited, having been participated in by Messrs. Young, F. Rand, Sanford, Pines, Shafner, Parsons, A. S. McDonald, McKittrick, Patterson (of Acacia Villa Seminary), and the Superintendent of Education, who was present at the opening of the second session. The next paper, on the "Art of Teaching," by Mr. W. G. Parsons, attracted great attention by its brilliant style and philosophic presentation of great principles. At a subsequent stage Mr. Parsons was requested to authorize its publication in the CANADA SCHOOL JOURNAL. In immediate sequence to Mr. Parsons' paper, Mr. W. H. Magee read a thoughtful essay on "School Lessons."

The evening session of Thursday took the form of a public educational meeting in Scotia Hall. This was well attended, considering that the village was astir with preparations for the Provincial Exhibition to come off in a few days. Addresses were delivered by the Rev. A. W. Sawyer, D.D., President of Acadia College, Dr. Allison, Superintendent of Education, A. McNult Patterson, Esq., A.M., and Professor Eaton, of the Provincial Normal School.

The exercises of Friday morning's session began with an instructive lesson on "Circulating Decimals," by Mr. H. Elliott, which was highly appreciated by the mathematicians present. This

was followed by an illustrative lesson in grammar by Mr. Parsons. A general conversation ensued, in which reference was made to the preceding papers not already noted as discussed. Mr. Munro, of Annapolis county, disclosed his methods of teaching grammar. The Superintendent of Education spoke highly of the meritoriousness of Mr. Parsons' paper on "the Art of Teaching," and emphasized some of its points. The President thought that there were other important considerations besides making everything easy for the child. Mr. W. P. Shafner gave an outline lesson in "History." He warmly commended the diagraphic method. Messrs. Parsons, Pines, and Elliott followed with brief remarks. Mr. F. I. Kinsman, B.A., concluded the formal exercises of the Association with a vigorous arraignment of the system of Public School examinations as at present conducted. His views were partially endorsed by some, but were energetically combated by Mr. Elliott and others. Short closing addresses were delivered by the Rev. Mr. Logan, the Superintendent of Education, and Professor Eaton. The next meeting of the Association is to be held at Windsor, Hants Co.

Egbert M. Chesley, Esq., A.M., has been appointed Principal of the Yarmouth Seminary.

A meeting of the Senate of the University of Halifax was held in the Legislative Assembly Room, Halifax, on the 22nd of September. The reports of Examiners in the Arts and Science courses were received. The business transacted was chiefly formal. Several notices of important motions to be brought forward at the annual meeting in December were given. In the afternoon of the same day, the public ceremony of conferring degrees and presenting prizes took place. At the termination of the ceremonial part of the programme, the Reverend Chancellor spoke encouragingly of the progress and prospects of the University, and dwelt at length and with great eloquence on the question of higher education in Nova Scotia. In response to calls, the Rev. Principal McKnight and Dr. Allison delivered brief addresses. The following are the Pass and Prize lists :—

FIRST B.A. EXAMINATION.

(Arranged in order of proficiency.)

First Division :—1. W. Morely Tueedy, Mount Allison College ; 2. H. R. McKeown, do. ; 3. John Harper, Private Study ; 4. J. W. Webster, Mount Allison College ; 5. Harriet S. Stewart, do. *Prizes.*—First Prize, W. Morely Tweedy ; Second do., H. R. McKeown ; Third do., John Harper ; Fourth do., J. W. Webster.

B.A. EXAMINATIONS.

First Division.—S.Duncan Scott, Mount Allison College. *Prize.*—First Prize, not awarded ; Second do., S. Duncan Scott.

MATRICULATION EXAMINATION.

Pass List.—(Arranged in order of proficiency.) 1. Isaac Gammell, Picton Academy ; 2. N. T. Lynskey, St. Mary's College ; 3. Ada L. Brownrigg, Picton Academy ; 4. Thomas Stewart, Private study ; 5. Adams Archibald McKay, Picton Academy ; 6. John Howard McKay, Picton Academy ; 7. Alex. W. Duff, St. John N. B. Grammar School ; 8. John McKay Baillie, Picton Academy ; 9. Charles Norman Jeffrey, Mount Allison Academy. The matriculation prizes were as follows : First, Chancellor's Gold Medal, Isaac Gammell ; Second, N. T. Lynskey ; Third, Ada L. Brownrigg.

NEW BRUNSWICK.

The Board of Education has given all due consideration to the suggestions made by the Educational Institute through the Chief Superintendent with reference to the prescribed course of instruction, and has adopted substantially the amendments proposed A revised edition of the Course has been published, to take effect November 1, 1880. There are no "sweeping changes" : the curriculum as a whole remains as it was. The few slight improvements made, as the result of a year's experience, will render it still more acceptable to teachers.

Many teachers and school officers will be pleased to learn that a new and revised edition of the "Manual of the School Law and Regulations" is in course of publication, and will appear this autumn. The former edition was exhausted some time ago.

The "Educational Circular," No. 11, issued about the last of July, contains, in addition to the usual official notices, examination papers, etc., a valuable paper by James Fowler, M.A., late instructor in the Normal School. This paper embraces a large number of additions to the list of New Brunswick plants previously published, and also a dissertation on "The Advantages resulting from a Knowledge of the Flora of our Province." There is also an admirable article on "Teaching Reading in Public Schools," by E. Melville Bell, F.E.I.S,—well worthy of an attentive perusal by every teacher.

The closing exercises of the Provincial Normal School took place on Friday, the 17th of September, in the presence of the Chief Superintendent, the President of the University, and a number of other visitors. About six hours were devoted to the examination of classes, illustrative lessons by student-teachers, recitations, reading of essays, etc. At the close the Principal announced that the successful competitor for the Lorne Silver medal, awarded for highest professional standing, was Mr. Melvin L. Young, of Charlotte county.

Both Principal Crocket and Dr. Rand referred in feeling terms to the loss the institution was about to sustain in the removal of Mr. Fowler to another and a higher sphere of labor. They eulogized his scholarly attainments, and the character of the work he had done during his connection with the Normal School, and said he would carry with him the good-will of all who had known him in this Province.

It may be mentioned here that, on the day preceding his departure, at an informal meeting of the staff of instructors in the library of the Normal School, Mr. Fowler was agreeably surprised by the presentation of a handsome gold pen and pencil, as a token of esteem from his late colleagues. In a few well-chosen words, Mr. Crocket expressed to him, on behalf of his fellow-teachers, the feelings of respect and of mingled pleasure and regret which prompted them to ask his acceptance of this gift. Mr. Fowler replied in appropriate terms.

The anticipated change in the length of the Normal School Sessions has been decided upon, and will take effect the coming winter. By an order of the Board of Education, made on the 30th of August last, section 1st of regulation 37, relating to the Provincial Normal School, is repealed, and the following provisions are substituted therefor :

1. There is to be but one session in each school year, beginning on the first Wednesday in November, and closing on the last Friday in July.

2. In order to qualify any candidate for examination for license of the third or second class, a full session's attendance at the Normal School will be required.

3. Until otherwise ordered, holders of provincial license of the second or first class, desiring to obtain further instruction (previous to examination for advance of class or otherwise), may be admitted on the first Wednesday in May.

4. Until otherwise ordered, applicants for admission to the French preparatory department shall be admitted on the first Wednesdays in November, February or May ; licenses of the third class valid for a period of three years from the close of the school term in which they are granted, shall be issued at the close of each quarter to such students of the French department as shall be found qualified to receive the same. Such license shall also admit the holder to enrolment without examination as a regular student of the Normal School.

The fall term of the Provincial University opened September 16th, with the usual gathering of students and friends of the college. Words of welcome to the undergraduates and of hopefulness in reference to the year's work were spoken by Dr. Jack, Dr. Harrison and Prof. Rivet. During the vacation, extensive repairs and improvements have been made in and about the college premises.

No less than nine of the graduates of 1880 were among the candidates for Grammar School License at the recent examination, the most of whom attended professional classes at the Normal School for some weeks previously. At least two of these have already been appointed to good positions,—Mr. A. W. Wilkinson to the Principalship of the St. Andrew's Grammar School, and Mr. J. W. McCready, to the charge of the schools at St. Mary's (in the large new building recently erected).

At the examination for license, held at Fredericton on the 21st of September and following days, there were 134 candidates, divided as follows :

	M.	F.	Total.
Grammar School	10	0	10
First Class	8	4	12
Second Class.	33	58	91
Third Class.....	4	17	21
	55	79	134

The Normal School classes furnished 113 of the number. In addition to these, about twenty were examined at St. John and

Chatham, and five from the French Preparatory Department would receive Third Class License.

The Albert County Teachers' Institute held its third annual meeting at Harvey, on the 2nd and 3rd of Sept., with the following officers, elected at the first session, viz. Mr. N. Duffy, President, Mr. Joshua Thompson, Vice-President, Mr. Wm. Jones, Secretary-Treasurer, Miss Ada Russel and Miss Maud Charters, additional members of managing committee. C. A. Peck, Esq., was elected an honorary member of the Institute. The papers read at the several sessions were as follows:—"The aim of common school education," by Miss S. E. Brewster; "The Importance of Intellectual Training for Teachers" by the President. (Both of these were read a second time by request); "How to teach writing," by Mr. Chipman Bishop; "The Discouragements of Teachers," by Miss Moore; "How to Teach History," by Mr. Jones; "The Teaching of Grammar," by Mr. Beverly Nobles. Dr. Rand was present and participated in the discussions on some of the papers and on other topics. A considerable part of two sessions was occupied in the consideration of a variety of questions relating to the Course of Instruction, the Inspectorial Regulations and other matters. Questions on these subjects were freely put to the Chief Superintendent by members of the Institute, who received much light from the Doctor's ready answers, and must have found not a few real or imaginary difficulties removed. On the evening of the first day, Dr. Rand delivered a public lecture on certain phases of educational work in this Province, a lecture which was listened to with great pleasure and profit by a large audience, the President of the Institute occupying the chair. At the closing session of the Institute there was a pleasing variation from the usual "question-box." The lady-teachers took the part of questioners, and the gentlemen did their best to furnish satisfactory replies. Another good thing introduced here was calling the roll of districts represented, as well as of teachers. The proceedings closed with a resolution of thanks to Dr. Rand for information given and sympathy show to the teachers in their work.

At the Teachers' Institute for Sunbury County, held at Oromocto simultaneously with the above, the officers and committee chosen for the year were Mr. A. L. Belyea, President, Miss Bessie Bridges, Vice-President, Mr. C. S. McCutcheon, Secretary-Treasurer, Mr. G. H. V. Belyea and Miss Ida Barker. Papers were read by Mr. Bulyea, on "Written Examinations—their Use"; by Mr. McCutcheon on "Physical and Vocal Culture," and another on "How to secure Perfect Order in School"; by the President on the question "How to promote the Co-operation of Teachers and render Institutes increasingly successful." There were discussions on these subjects and on county educational matters.

We have no account of the Restigouche County Institute.

QUEBEC.

The introductory lecture of the Ladies' Educational Association, Montreal, for the present year, was given in Synod Hall, by President Wilson, LL.D., of Toronto University. Dr. Dawson, Principal of McGill University, occupied the Chair, and on the platform were the Rev. Dr. Jenkins, the Rev. Prof. Murray, LL.D., Dr. Wilson and Prof. Moyse. The hall was filled with a large audience composed almost entirely of ladies. Dr. Wilson, in the course of an admirable lecture, showed how important is the sphere of womanhood, and how she was gradually raised in the social scale by the advance of civilization, and more especially by the spread of Christianity. The Rev. Dr. Jenkins, in moving a vote of thanks to the lecturer, congratulated him on the high and honourable position to which he had lately attained as President of the Toronto University.

The opening ceremonies for the ensuing term of the Diocesan College, Montreal, took place lately in the rooms of the College at Synod Hall. The Chair was occupied by his Lordship the Bishop of Montreal, and addresses were delivered by Bishop Alford and the Rev. Dr. Bell.

Mr. John Harper, B.A., was recently appointed Rector of the High School, Quebec, in the room of Mr. Mitchel who has resigned that position. Mr. Harper, till his present appointment, was Rector of the Normal School and one of the Professors of the Prince of Wales College, Charlottetown, Prince Edward Island. He had previously, for a series of years, been Rector of the High School, St. John, New Brunswick. In all of these positions his record as a teacher and administrator in school management, and as a scholar, is of the highest order. It is expected that from his experience, his previous success, and tact in the conduct of numerously attended schools, that Quebec High School will attain to a high position among the classical institutions of the country.

In the High School, Montreal, Mr. Nelson Power, B.A., Oxon., takes the place of Mr. Roodle, whose resignation was accepted previously to the closing of the schools for the summer vacation.

The great event of the month in an educational point of view, is the laying the corner stone of the new Museum, McGill University. The Museum building about to be erected is a gift to the University, made by Peter Redpath, Esq., and it is said that when completed it will cost over a hundred thousand dollars. His Excellency, the Governor General laid the corner stone in the presence of the members of the Convocation of McGill College, and a large number of invited guests, as well as of many others whom so interesting an occasion attracted to the place. An opening prayer, appropriate to the occasion, was read by the Venerable Archdeacon Leach. Principal Dawson then addressed the Convention, and after expressing the gratitude of the University to the liberal donor of the new museum, proceeded to explain the nature and utility of the gift. He said:—

A university museum is not merely a place for exhibiting specimens. It is an institution for teaching and for general research; hence the new building will have commodious class-rooms and laboratories, and will accommodate the classes in geology and biology, as well as special students. It will send forth men, and, I hope, women also, trained to interrogate nature, and to discover the hidden treasures of our country, and to ward off, by the aid of science, injuries that may threaten our industries. From it will emanate new discoveries creditable to Canada, and tending to the advancement of science. It will enable instruction to be given under the most favorable conditions, not merely to University students, but to special students and to the public generally. It will be a centre of information to which all interested in the aspects of nature in this country, and in the development of our resources will resort for aid and guidance. Nor will it be without its influence in the highest interests of humanity. The testimony of nature to the power and divinity of its author may sometimes be obscured by the imperfect or inaccurate teachings of man, but it cannot be suppressed; and one of the ways in which it is most profoundly impressed on the mind, is by the study of well arranged specimens of natural objects. The gift comes at a most suitable time, when our collections have outgrown the space for their exhibitions, when we require the rooms they occupy for other uses, and when the only national collection in Canada, that of the Geological Survey, is about to be removed from our city. The speaker then referred to the ample provisions made for such objects in other countries, while in Canada we were as yet only following at a distance; and expressed the hope that the present great benefaction, the largest in amount since the original endowment by McGill, would lead to similar provision being made for other wants of the University.

The Principal's remarks were received with much applause, and thereafter Mr. Peter Redpath came forward and addressed the members of Convocation as follows:

Mr. Chancellor and Gentlemen of Convocation:

A desire to aid the McGill University in the educational work which it is carrying on, and which, notwithstanding its very limited means, it is endeavoring to extend, has prompted me to supply one of its many wants by the erection of a museum on the grounds of the University. The utmost space which can in the existing buildings be devoted to museum purposes is altogether inadequate, even for the exhibition of specimens already belonging to the University, not to mention the extensive geological collections which the Principal proposes to present when sufficient accommodation shall be provided. This building is therefore intended as a place of deposit and study of specimens in geology, mineralogy, palæontology, zoology, botany and archæology, and it will probably more than meet all the immediate requirements of the University in that direction. It is intended that the use of the Museum and its contents shall be in the first place for the professors and students of McGill College and University, and secondly for all students of natural science and for the public, under such regulations as may from time to time be enacted by the corporation of the University, with the approval of the Board of Governors. When the undertaking was commenced, I did not anticipate any such ceremony as that which has brought this assembly together to-day. I am deeply sensible of the honor conferred by His Excellency the Governor-General in taking a part in it, and I desire for myself to thank His Excellency for his presence on the occasion.

Mr. Redpath then requested His Excellency to lay the corner stone.

His Excellency, after duly performing the ceremony of laying the corner stone, delivered a very excellent and appropriate address, dwelling on the munificence of the gift—its great utility to the University and scientific research. At the same time he passed a high and well-merited eulogium on the learned Principal and his valuable scientific works and investigations. All honour to Mr. Redpath for his princely and munificent contribution to learning and science. Let us hope that his noble example will soon be followed by many others whom God has blest with ample means, and that this is only the beginning of still greater contributions to the cause of science and learning in Canada.

A meeting of the Protestant Committee of the Council of Public Instruction is to be held on the 6th of October next, for the appropriation of the grants from the Superior Education Fund, and the conduct of other important business connected with Protestant Education in the Province of Quebec.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

GLENGARRY TEACHERS' ASSOCIATION.—The regular meeting of the Glengarry Teachers' Association was held in Alexandria on September 9th and 10th. About seventy-five teachers, at present in charge of schools, were in attendance. Nearly every subject taught in the common schools was discussed, but prominence was given to arithmetic and English composition. The following were the addresses given and papers read:—Arithmetic, particularly the solution of difficult type questions; English Literature, Reading, Euclid, Electricity, English Composition, Botany, Origin of the English Nation, Departmental Regulations, Geography, and Recitations. The meeting then adjourned till the first Thursday and Friday of February, 1881.

WATERLOO COUNTY TEACHERS' ASSOCIATION.—The Waterloo County Teachers' Association held its half-yearly meeting at Berlin, on Friday and Saturday, September 10th and 11th. About 80 teachers were in attendance. The President, Mr. W. F. Chapman, occupied the chair. After the formal business was disposed of, Mr. G. A. McIntyre took up his subject, Arithmetic, which was followed by an animated and lengthy discussion. On motion, a committee was appointed to draw up rules and regulations for the conducting of the next Uniform Promotion Examination. Mr. D. K. Erb then gave a very practical discourse on teaching reading to a second class. Mr. Thos. Pearce, I. P. S., gave some very interesting and valuable hints on teaching history. Miss C. A. Jones kindly treated the Association to an unusually excellent essay on Reading. Mr. Geo. Sharman explained his method of teaching Grammar from the beginning. Mr. S. S. Herner, delegate to the Provincial Teachers' Association, gave a very complete report of the proceedings of the last meeting of that body. An entertainment, to consist of a debate, &c., was arranged to take place at the next session of the Association. Second day.—After the meeting was formally opened, Mr. Groh introduced his subject, "How to Teach Vocal Music;" after which Mr. Wm. Scott, B.A., head master Toronto Model School, was introduced to the Association. During the day he addressed the meeting on "How to deal with Indolent Pupils," and "Memory, How to train it." His addresses were listened to with the closest interest, and loudly applauded. Moved by Mr. R. Alexander, seconded by Mr. S.S.Herner, "That in the opinion of the Waterloo County Teachers' Association, the retention of the apparatus part of the depository be recommended." Mr. J. Suddaby reported, on behalf of the Kindergarten Committee, what particular phases of the Kindergarten could be profitably introduced into the public schools. The programme for next session, as prepared by the Managing Committee, was then presented, after which the Association adjourned till the last Friday of January, 1881.

A SUMMARY FOR OCTOBER.—North Essex, at Windsor, 7th and 8th; South Grey, at Durham, 7th and 8th; Prescott, Vankleek Hill, 8th and 9th; West Huron, at Goderich 8th and 9th; Chatham D, at Chatham, 8th and 9th; Grenville, at Prescott, 14th and 15th; E. R. of Grey, at Thombury, 14th and 15th; Lambton, at Forest, 14th and 15th; E. Kent, at Ridgetown, 15th and 16th; Lanark, at Perth, 15th and 16th; Lennox and Addington, at Napanee, 15th and 16th; Wentworth, at Hamilton, 15th and 16th; Oxford, at Hamilton, 21st and 22nd; E. Middlesex, at London (?), 22nd and 23rd; North York, at Newmarket, 22nd and 23rd; S. Simcoe, at Barrie, 22nd and 23rd; North Perth, at Stratford, 22nd and 23rd; Northumberland, at Cobourg, 28th and 29th; Frontenac, at Kingston, 28th and 29th; Halton, at Oakville, 28th, 29th, and 30th; Prince Edward, at Picton, 29th and 30th.

SOUTH GREY.—The semi-annual meeting of South Grey Teachers' Association will be held in Durham on Thursday and Friday, 7th and 8th October, 1880. 1. President's address; 2. Joseph Reid, B.A.—Algebra to Beginners; 3 Mr. M. N. Armstrong—Recitation; 4. Mr. W. J. Galbraith—Geometry to Beginners; 5. Mr. R. Walker—Some Methods of Reward and Punishment; 6. Mr. Dixon—Teaching Writing to Juniors; 7. Mr. Charles Ramage—Teaching Reading to Juniors; 8 Mr. Leonard—Mistakes in Teaching; 9. Mr. D. Allan—Report from Provincial Association; 10. Mr. W. K. Reid—Music in schools; 11. Mr. Jenkins—Drawing with Illustrations; 12. Mr. S. Aicheson—Natural Philosophy; 13. Mr. M. P. McMaster—Teacher's Duty Outside Schoolroom. The best methods of teaching Arithmetic, Reading and Geography will be illustrated with classes, by Misses Corry and Armstrong, and Messrs. Jones and Blagbourne. A suitable entertainment will be provided for Thursday evening. It is to be hoped that all Teachers in the district will consider it their duty to be present.

WM. FERGUSON, I P.S., President. J. C. BAIN, Secretary.

WEST HURON TEACHERS' ASSOCIATION.—The semi-annual meeting of this Association will be held in the High School, Goderich on Friday and Saturday, Oct. 8th and 9th, 1880, commencing each day at 9 o'clock a.m. G. W. Ross, M.P., has promised to be present and take part in the exercises. *Programme.*—President's Address—Mr. H. I. Strang, B.A.; Report of Committee on Promotion Examinations—Mr. G. Baird; How to Teach Reading, Mr G. W. Ross; Mensuration—Mr. J. W. Morgan; School Routine—Mr. J. R. Miller, I P.S.; Hygiene for Teachers—Mr. T. F. McLean, M.D.; Difficulties in Analysis and Parsing—Mr. H. I. Strang, B.A.; School Management—Mr. G. W. Ross; Composition—Mr. A J. Moore, B.A.; Treasurer's Report—Mr. W R. Miller; Election of Officers. On Friday evening a Public Meeting will be held in the Temperance Hall. A Programme, consisting of Music and Readings, and short Addresses by G. W. Ross, Esq., and others, will be provided.

H. I. STRANG, B.A., President. W. R. MILLER, Sec.-Treas.

CHATHAM DISTRICT.—The Chatham District Teachers' Association will meet at the Central School, Chatham, on Friday and Saturday, 8th and 9th Oct., 1880. *Friday.*—10.00 to 10.15 a.m., Reading Minutes and Correspondence; 10.15 to 11.15 a.m.—English Literature, D. S. Paterson, B.A., High School Master; 11 15 to 12 m.—Composition, Miss E. S. E. Dawson; 1 30 to 2.30 p.m.—Orthoepy, W. M. Nichols, B.A., I.P.S.; 2.30 to 3 30, p.m.—Public School Diplomas, J. Donovan, Esq.; 3 30 to 4.30 p.m.—Music: The Sol-Fa Notation Explained, F B. Steward, Esq. *Saturday.*—9 to 10 a m.—Arithmetic: 2nd Class Paper, Mr. McGillivray, Ridgetown; 10 to 11 a.m.—Algebra, D. F. Wilkins, B.A.; 11 to 12 a.m.—Answers to the Question Drawer, and New Business. The persons introducing the subjects are expected to allow a reasonable portion of time for General Discussion, in which *all* are expected to engage.

REV. A. MCCOLL, President. J. DONOVAN, Secretary.

GRENVILLE TEACHERS' ASSOCIATION.—The next regular meeting will be held in the High School, Prescott, on Thursday and Friday, Oct. 14th and 15th, 1880. THURSDAY, 9 to 12 a m. and 2 to 5 p m.—Opening address by the Vice-President; Reading of minutes and report of Committee on Library; Appointment of Officers; Discussion on School Journal; Arithmetic, Dr. McLellan; Be Accurate, J. A. Carman, B. A.; Grammar, Mr. Conerty; Text-Books, M. McPherson, M.A; The Reading Lesson the Best Object Lesson, Rev. Geo. Blair, M.A.; Evening Lecture in Town Hall by J. A. McLellan, M.A., LL.D., High School Inspector, Subject: "Education." FRIDAY 9 to 12 a.m., and 1.30 to 4 p.m.—Algebra, or Euclid, Dr. McLellan; English Literature, T. H. Redditt, B.A.; The Law of Progress, Mr. McCullough; The Electric Telegraph and the Telephone, with experiments, Rev. Geo Blair; Address to Teachers, Dr. McLellan; Questions for Mutual Information. October 14th and 15th will be allowed as visiting days to those only who attend the Association in good faith.

ALEX. MCDONALD, Vice-President. GEO. BLAIR, I.P.S., Sec'y.

EAST KENT.—The Semi-Annual Meeting of the E. K. Teachers' Association will be held in Ridgetown on Friday and Saturday, Oct. 15th and 16th, 1880. PROGRAMME.—*Friday.*—1 10 to 11, Literature for 5th and 6th classes, J. W. Lamoreaux; 2. 11 to 12, Mensuration, G. W Sheldon; 3. 1.30 to 2, Business; 4. 2 to 3, Mental Philosophy as an Aid in Teaching, E. Masales; 5. 3 to 4, Method of Teaching History. A. J. Cadman, 6. 4 to 5, English Composition, W. S. McBrayne. *Saturday.*—7. 9.30 to 10.30, Arithmetic to 1st and 2nd classes, R. A. McConnell; 8. 10 30 to 11.30, Marking and Reports, T. A. Edwards. A re-union will be given on Friday evening, at which Readings, Essays, Vocal and Instrumental Music will form part of the evening's entertainment.

E. MASALES, President. W. S. MCBRAYNE, Secretary.

LENNOX AND ADDINGTON.—The next meeting of the Teachers' Association will be held in the Napanee Model School on Friday and Saturday, the 15th and 16th of October next, commencing at 10 a.m. on the 15th. *Friday, 15th*—How to teach Simple Multiplication, Division and Reduction, Mr Sangster; How to teach Reading, Mr. Tilley; How to keep School Records, Mr. Bowerman; How to teach Physical Geography, Mr. Burrows, of Bath; How to teach Notation and Numeration. Simple Addition and Simple Subtraction, Mr. McNabb; How to teach Reading to Beginners, illustrated by a class of children, Miss Aylesworth; How to teach Composition, Mr. A. Embury. In the Town Hall commencing at 7.30 p.m.—A Paper on School Discipline, by Mr. Chantler; Calisthenics, by Misses Fraser and VanDyck; A Paper on Home Work, by Mr. Kimmerly; Lecture on History, by Prof. G. W. S. Wright, M. A., of Albert College, Belleville. *Saturday, 16th.*—How to teach Spelling, Mr. N S. Asselstine; How to teach the Verb, Mr. Matheson, How to teach Writing, Mr. Black; How to teach Object Lessons, The President; The Question Drawer. Music will be furnished during the proceedings of the Association, and at the Town Hall in the evening. A cordial invitation to attend, and take part in the proceedings is extended to all who desire the advancement of our Schools.

WM. TILLEY, Secretary. FRED. BURROWS, President.

WENTWORTH TEACHERS' ASSOCIATION.—The next regular meeting of this Association will be held in the Collegiate Institute, Hamilton, on Friday and Saturday, the 15th and 16th of October, 1880. PROGRAMME.—*Friday.*—Forenoon Session.—10 to 12: Routine Business, Appointment of Committees, Discussion of Recent Regulations. Afternoon Session—1.30 to 4.30: (a) Geography, A. Scott Cruikshank; (b) Reading, junior classes, J. H. Smith; (c) Schools of Germany, Dr Hare; (d) History, G. W. Johnson, Evening Session—An address by G. W. Ross, Esq., M.P. *Saturday.*—Forenoon Session—9 to 12.30—(a) Model School Class examined by G. W. Ross, Esq., M.P; (b) Teaching Composition, Discussion; (c) Length of School Hours, Discussion. Friday will be considered a visiting day. The proceedings will be enlivened by Vocal and Instrumental Music. All the teachers are expected to attend the meeting of this Association. Trustees are cordially invited to be present.

C. J. ATKINSON, Secretary, J. H. SMITH, P. S. Inspector W. H. BALLARD, President.

PRINCE EDWARD TEACHERS' ASSOCIATION.—Semi annual convention, Picton, October 29th and 30th. 1. School Discipline, T F. Spafford; 2. Junior Reading, W. T. Kinney; 3. General Infinitives, 6. A Blakely; 4 Simple rules of Arithmetic, W. J. Osborne; 5. Writing—with specimens, H. A. Powers; 6. Railways of Ontario, B, Rothwell; 7. Islands of the Pacific, S. B. Nethery; 8 Educational Notes, T. J. Park, G. D. Platt; 9. Algebra, or Euclid, Dr. McLellan: 10. English Composition, R. Dobson, B.A.; 11. Measurement of Angles, W. R. Bowerman; 12. The Teacher and His Work, Dr. McLellan; 13. National Education, a lecture in the Town Hall, Friday, 7.30 p.m., Dr. McLellan. Sessions: 9 to 12 and 2 to 5.

Every Teacher is expected to attend both days. Note will be taken of absentees.

Friends of Education cordially invited.

G, D. PLATT, Reg.

REVIEWS.

ELEMENTARY COURSE IN NATURAL PHILOSOPHY. For use in High Schools and Academies. By Le Roy C. Cooley, Ph. D., *Professor of Physics and Chemistry in Vassar College.* New York: Scribner's Sons, 743 and 745 Broadway. The feature in this work is the prominence given to the principle of energy. In the first three chapters, Matter and Motion are taken up; in the fourth, Energy; and in the remaining chapters is exhibited the part Energy plays in the phenomena of sound, heat, light and electricity. In the hands of an intelligent teacher, this will be found an excellent book.

MATHEW'S, SERIES OF ARITHMETICIAL TEST CARDS. Moffatt & Paige, No. 28 Warwick Lane, E. C., London. Price 1s. per Packet. Each packet contains fifty cards, and each card has from four to six questions. Throughout the same packet the sets of questions are of the same degree in difficulty. Would doubtless be found handy things in a school-room, —each pupil could be working at a different set of examples, and yet the total work of each would be of the same value.

AMERICAN JOURNAL OF MATHEMATICS. Vol. iii. No. 1. Contents: Regular figures in n-dimensional space, by W. T. Stringham, *Fellow of the John Hopkins University.*

On the Algebra of Logic, by C. S. Peirce. On certain Ternary Cubic-form Equations, by J. J. Sylvester. On the General Equations of Electro Magnetic Action with Application to a New Theory of Magnetic Attractions, and to the Theory of the Magnetic Rotation of the Plume of Polarization of Light. By H. A. Rowland, *Professor of Physics in the John Hopkins University.*

Subscription price $5.00 a volume; single numbers $1.50. Communications and subscriptions addressed to W. E. Storey, John Hopkins University, Baltimore, Ind.

THE MATHEMATICAL VISITOR for July has been received. As usual, it contains a large number of interesting problems of all degrees of difficulty. The solutions furnished are instructive. We commend it to our Canadian mathematical readers. Single numbers 50c each. Address, Artemas Martin, M.A., Erie, Pa.

THE SCHOOL VISITOR, devoted to the Study of Mathematics and English Grammar. Published by J. S. Royer, Ansonia, Ohio. Published monthly at 60c a year. It contains good collections of problems in elementary mathematics, with solutions. The notes and queries in grammar are worthy of attention.

THE SCHOOL AND UNIVERSITY MAGAZINE.—A journal of intercommunication for London University Students, Students under the Intermediate Education Act (Ireland), and Students under the Science and Art Department, South Kensington. London: W. Stewart & Co., Holborn Viaduct Steps, E.C. Price, fourpence for single copies. It contains examination papers on various subjects, with modern answers.

MAGAZINES.

We beg to acknowledge the receipt of the *Contemporary Review* from Strahan & Company, which contains the following articles;—1. The Vanity of Nature by the Duke of Argyle; 2. Heinrich Hines, by Chas. Grant; 3. The Future of the Canadian Dominion, by George Anderson, M.P; 4. The Eleusinian Mysteries, a Study of Religious History, by Friemormant; The Last Phase of the Afghan War, by Lieut. Col. R. D. Osborn; 6. The Sunset in England, by Jas. Ashcroft Noble; The Apprenticeship of the Future, by Prof. Silvanus P. Thompson; 8. Fiji: Notes of a Vacation Tour, by Chief Justice Gorrie; 9. The Impending Crisis in Turkey, by an Eastern Statesman. The Homeric Question; A reply to Prof. Blackie, by Prof. Geddes.

We have also received from the Leonard Scott Publishing Co., *Blackwood's Edinburgh Magazine,* containing the following articles: 1. The Pillars of the State; 2. Dr. Wortle's School, Part V.; 3. The Bayard of the East; 4. A Week in Athens; 4. A Lasting Memory; Bush Life in Queensland, Part X.; New Novels.

From D. Appleton & Company, New York, the *Journal of Speculative Philosophy* for the month of October has been received. It contains the following: —1. Criticism of Kant's Main Principles, by J. H. Stirling; 2. Kant's Principles of Judgment, by John Watson; Philosophic Outlines, by H. K. Jones; Notes and Discussions, The Philosophical Element in Shelby.

The September No. of this Magazine has not been received.

The September and October numbers of *The Western* has been received from Henry W. Jameson, St. Louis. The contents are as follows:—1. Francisca Evelyne, by E. F. M.; 2. Napoleon Bonaparte, by S. W. McCall; 3 The Rose, by L. J Block; 4. John McCullough, by G. Bloede; 5. Genius and Labor, by E. H. Crosby; 6. Holbein and his Time, by Laura Hinchman; 7. Falstaff, by Sophia F. Grubb; 8 Laura Doon, by Paul Pastnor; 9. Romance of Doubt, by Chas. H. Brittan; 10. Current Notes; 11. Book Reviews.

Official Department.

INTERMEDIATE EXAMINATION OF JULY, 1881.

The works prescribed in English Literature for the Intermediate Examination in July, 1881, are "Scott's Lady of the Lake," with special reference to Cantos V. and VI, and "Addison's Sir Roger de Coverley."

Latin: The Accidence and the Principal Rules of Syntax and Prosody; Exercises; Cicero in Catilinam, II., III., IV., and Virgil, Æneid, B. I, 1-306; Learning by heart selected portions of Virgil; Re-translation into Latin of easy passages from Cicero.

French: The Accidence and Principal Rules of Syntax; Exercises; De Fivas' Introductory French Reader, pp. 49 to end; Bonnechose, Lazare Hoche; Re-translation of easy passages into French; Rudiments of Conversation.

German: The Accidence and the Principal Rules in Syntax; Exercises; Adler's Reader, 1st, 2nd and 3rd Parts; Der Gang nach dem Eisenhammer; (Schiller); Die Kraniche des Ibycus (Schiller); Re-translation of easy passages, into German; Rudiments of Conversation.

The other subjects as before.

TORONTO, *July, 1880.*

Publishers' Department.

Subscribers will please notify this Office at once of the non-receipt of the CANADA SCHOOL JOURNAL. It is mailed regularly to all, but from complaints that reach us, it is feared, from some unknown cause which needs investigation, it frequently fails to arrive. Subscribers will also be good enough to inform us at once when they change their addresses.

We desire to thank those kind friends who have sent us the information respecting the Teachers' Conventions which appears in our columns this month. We are pleased to state that in many of the counties the CANADA SCHOOL JOURNAL is subscribed to largely by the Teachers' Associations, and in some the advisability of taking it similarly is to be discussed at the ensuing Conventions. The present number plainly shows that no better educational periodical could be in the hands of the teacher—a fact which is admitted on all sides, and of which we constantly receive the evidence of teachers in this country and the United States. We will continue to use every effort to make it a really valuable "teacher's aid," and therefore we shall expect that the profession will not only subscribe for it themselves, but recommend it to trustees, parents, and others who are interested in school work. We shall be glad to hear from the secretaries of the several associations what action has been taken in this matter.

A teacher in Missouri, U.S., writes, "I love the CANADA SCHOOL JOURNAL; it is the best educational journal in Canada and the United States; I read about a dozen of them, and am prepared to judge. I will get some subscribers."

Another teacher states: "I find the JOURNAL of great service to me, particularly in the mathematical department. It is one dollar *well* spent."

A third (about leaving the profession) writes, "I cannot give up *our* paper, which has had such marked success, and which deserves our heartiest support. In short, it is *the best* educational journal I have ever subscribed for. I shall always be ready to speak a kind word for it and help its circulation."

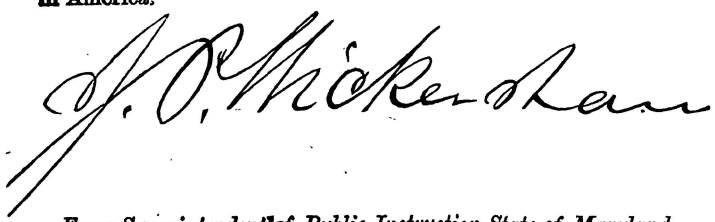
N.B.—Our Correspondents and Subscribers will please bear in mind that communications connected with the CANADA SCHOOL JOURNAL are not to be written on the same sheet with business orders for the firm. They may, however, be enclosed in the one envelope. Considerable trouble and confusion will thus be prevented.

What some of the Leading Educationists of America say of

THE CANADA SCHOOL JOURNAL.

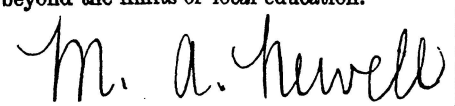
From Superintendent of Public Instruction State of Pennsylvania.

I have read the CANADA SCHOOL JOURNAL from the first number to the last. It is one of the best magazines of its class published in America.



From Superintendent of Public Instruction State of Maryland.

Among all the Educational Magazines which come to this office, there is none I value more highly than the CANADA SCHOOL JOURNAL, partly from its high intrinsic value, and partly because it gives us an opportunity of noticing how various most important subjects look when viewed from a standpoint somewhat different from our usual one. This opportunity is very valuable and indeed essential to all who would pass beyond the limits of local education.



From the Secretary of Board of Education State of Connecticut.

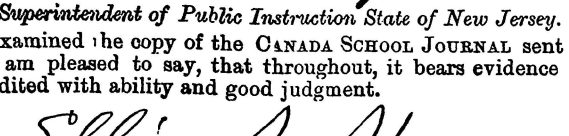
The CANADA SCHOOL JOURNAL seems to me ably edited, practical, suggestive and well adapted to aid teachers and school officers in their important work. It merits a wide circulation in the United States as well as in Canada.

From Superintendent of Public Instruction State of Alabama.

The copy of the CANADA SCHOOL JOURNAL which you were kind enough to send me has been received and carefully examined. I do not hesitate to say that I regard it as a paper of great service, and I shall be glad to have it widely circulated and extensively read in Alabama.

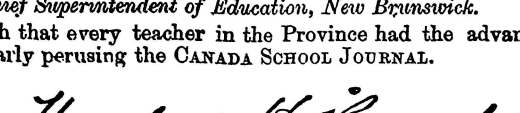
From the Superintendent of Public Instruction State of New Jersey.

I have examined the copy of the CANADA SCHOOL JOURNAL sent me, and I am pleased to say, that throughout, it bears evidence of being edited with ability and good judgment.



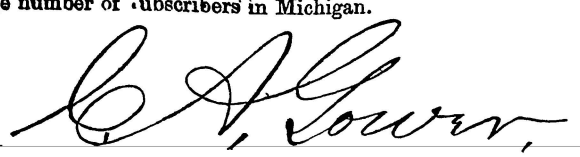
From Chief Superintendent of Education, New Brunswick.

I could wish that every teacher in the Province had the advantage of regularly perusing the CANADA SCHOOL JOURNAL.



From the Superintendent of Public Instruction, State of Michigan.

I am much pleased with the CANADA SCHOOL JOURNAL. It is solid but not heavy, spicy but not trifling. I hope you may get a large number of subscribers in Michigan.



From Superintendent of Public Instruction State of Missouri.

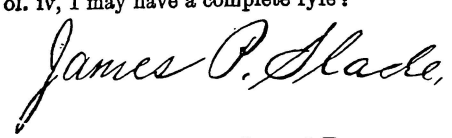
The CANADA SCHOOL JOURNAL has been coming to my office regularly, and is placed on permanent fyle. I find it a very excellent journal, both as to its mechanical execution and the character of its editorials and contributions. Its subscription price is very small. I commend it to all educators with whom my opinions on such matters may have weight.

From Superintendent of Education for New Orleans.

Your CANADA SCHOOL JOURNAL I read with interest—deeming it one of the most valuable published on this continent. The matter therin is manifestly prepared with great care, as well as ability, and the subjects treated are of the highest importance to teachers and School officers. It will afford me pleasure to show your JOURNAL to friends who call upon me.

From Superintendent of Public Instruction State of Illinois.

I am very much pleased with the CANADA SCHOOL JOURNAL. It is ably edited; and with its valuable contributions and well chosen selections, it furnishes so much that is of use to every teacher, that I am not surprised to learn that it has a large and growing list of subscribers. The copy sent me is No. 30. Am I asking too much in requesting you to send me the back Nos. of Vol. iv, so that beginning with Vol. iv, I may have a complete fyle?

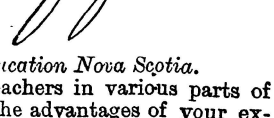


From Superintendent of Public Instruction State of Tennessee.

I take pleasure in commending the CANADA SCHOOL JOURNAL as being eminently instructive to the teacher, and as containing the order of merit, as an educational instrumentality for the elevation of the standard of teaching.

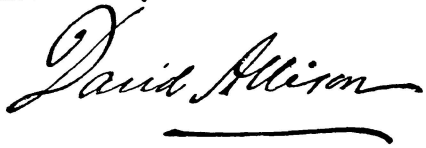
From Superintendent of Public Instruction State of Mississippi.

* * * * Its different departments are all ably conducted, and of educators, as well as others cannot but be interested and instructed by reading it. Accept my thanks for your proposition to send it to this office regularly.



From Chief Superintendent of Education Nova Scotia.

In order to meet the wishes of our teachers in various parts of the Province, and to secure for them the advantages of your excellent periodical, I hereby subscribe in their behalf for one thousand (1,000) copies, at club rates mentioned in your recent esteemed favor. Subscriptions will begin with January issue, and lists will be forwarded to your office in a few days.



From Superintendent of Public Instruction State of Minnesota.

I have read late numbers of the CANADA SCHOOL JOURNAL with the conviction that it is a valuable work for teachers of the United States, especially of the West. * * * I hope the JOURNAL will be taken and read by many of our teachers.

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(FROM "THE SPECTATOR")

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W. D. OTTER, *Lt.-Col. Comg. Queen's Own Rifles, Toronto.*

I have much pleasure in testifying to the clearness and conciseness of Mr. Hughes' Manual. I consider it *well adapted* in every particular for the object intended.

—o—

JOHN B. TAYLOR, *Lt.-Col., Deputy Adjt.-General, London.*

I have carefully looked over the Manual of Drill prepared by Mr. J. L. Hughes, and I do think it is *admirably adapted* to enable teachers to give their pupils a knowledge of squad drill. It is in fact the squad drill of the British army, put in a more simple and less technical manner, and pleasantly arranged. I do hope it will be used generally in our schools.

—o—

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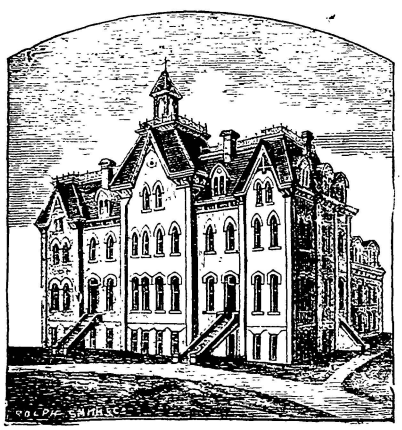

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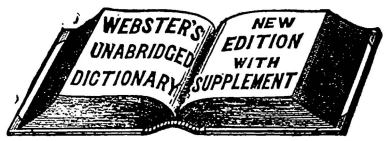

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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1878.
Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction, Quebec.
Recommended by Chief Superintendent of Education, New Brunswick.
Recommended by Chief Superintendent of Education, Nova Scotia.
Recommended by Chief Superintendent of Education, British Columbia.
Recommended by Chief Superintendent of Education, Manitoba.

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

THE CANADA SCHOOL JOURNAL IN 1881.

Our accounts from the various Teachers' Associations held last month are most encouraging. Not only has the CANADA SCHOOL JOURNAL been unanimously adopted by numerous Associations, to be supplied to the teachers partly at the cost of the Association, but at the meeting of the Teachers' Association of West Lambton, it was resolved that the Association altogether, at its own expense, should send the CANADA SCHOOL JOURNAL to every teacher in the county.

The publishers of the CANADA SCHOOL JOURNAL, on their part, are resolved to spare neither expense nor effort in their endeavors to make this journal worthy of the confidence thus bestowed on it by the teaching profession—to make it, in a word, the foremost educational journal on this continent. No less ambition ought to satisfy them or their constituents.

The publishers have lately made an addition to the editorial staff of the SCHOOL JOURNAL, and are prepared to furnish, during the coming year, an amount of matter exceeding that of any other educational paper, with full discussion of all topics of interest to the teaching profession and those connected with education. Literary reviews, and notices of all questions relating to our school system will be furnished, as well as personal intelligence, and reports of all meetings and other events of importance to teachers.

School inspectors and others engaged in educational work are requested to furnish the editor with reports of all Teachers' Associations, and other matters which ought to be placed before the profession and the public.

THE RECENT UNIVERSITY GATHERINGS.

The late University gatherings at Kingston and Toronto are somewhat noteworthy, if not remarkable in their way. That at Kingston was especially so for many reasons, while that at Toronto had a touch of sadness about its main incident. It witnessed the closing educational career of one of the ripest, if not the ripest, scholar in the Dominion. The gathering at Kingston, on the other hand, had nothing but gladness in all of its elaborate and enthusiastic demonstration.

The Rev. Dr. McCaul took leave of University College amid universal regret, after a prolonged and honourable career as its President. To him the provincial institution owes its present high position. His acknowledged scholarship shed a lustre on the whole University, even noted, as it has long been, for its able and distinguished professors. The incident of the unveiling of the likeness* of the departing President was a very touching one; and the graceful act and speech of the incoming President on the occasion struck a responsive chord in the hearts of all present—no less felt and appreciated by the many friends of both gentlemen who were not able to witness the ceremony. While we take leave of Dr. McCaul with unfeigned regret, we welcome with no less cordiality the new President, who, by common consent, is eminently fitted for his new and distinguished position.

The gathering at Kingston to instal the new Chancellor, and to take formal possession of the extensive and handsome addition to Queen's University buildings, was indeed a memorable one for many reasons. In the first place, it inaugurated a new and significant departure in Canadian University celebrations. For the first time the representative heads of other universities and colleges were present and took part in the ceremonial exercises. This was a graceful act on their part, and to invite them was a fitting one on the part of the Queen's University. The representative heads thus present were the Chancellor of Toronto University, the President of Victoria University, the President of Albert University, the Principal of the Toronto Protestant Episcopal Divinity College, and a representative professor from McGill University. Such a gathering was truly fraternal and hopeful, and contrasted strongly with the state of things in University matters which was thus described by a recent writer on *University Consolidation* in one of our magazines. He says:—

"Unfortunately, University men in Ontario have rarely if ever acted in concert. They have either been in antagonism to one another, or have chosen to maintain the position of dignified neutrality. . . . . This apathetic state of feeling, which seems chronic, we fear, is unfortunate for the University future of Ontario. By persisting in such an exploded Japanese system of non-intercourse, we are inflicting an evil on our country, and doing an injury to its higher scholarship."

The fears of this writer have fortunately proved groundless, and we congratulate all parties concerned on the abandonment of the former system of University non-intercourse.

The gathering at Kingston was further noted for the character and variety of the speeches delivered on the occasion. There was a raciness and spirit in all of the addresses delivered,

* Painted by a rising young artist and fellow-townsman, the eldest son of the Hon. Mr. Justice Patterson.

which added greatly to the interest and *eclat* of the occasion. The utterances of Chancellor Blake and of President Nelles were particularly striking and noteworthy. In his speech, Hon. Mr. Blake made reference to the often discussed question of "University Consolidation." He said:—

"It is obviously impossible that the educational interests of this could not be met by one institution in one place. Therefore it was not only desirable but necessary that other institutions should grow in different parts of the country. As to the degree granting power, he would say here, as he had said elsewhere, that the day may come, if now afar, when it may be centred in one institution, say the Provincial University. He did not believe that this would alter the position of the teaching staff, as each would have to stand upon its own footing. The stamp of the degree would be higher if it were conferred by one university alone. The first step towards that consummation was always apparent, in his judgment, when he saw the university increasing in its strength. The stronger the endowment, the better its staff; the more it flourished, less difficulties were in the way of the ultimate union of the graduating power."

On this subject Rev. President Nelles differed with Chancellor Blake, and was especially outspoken and emphatic in his utterances. He said:

"As to collegiate consolidation, which Dr. Grant deprecated, he could see great benefit in it. The difficulty would be in the moving of the colleges which were already established. If this could be accomplished none would rejoice more than he did, for the longer he lived the more he hated sectarianism and bigotry, and the consolidation of the colleges would break down these. As to university consolidation, the time for that had gone by. Many years ago Queen's and Victoria Colleges had urged it, and the late Principal Leitch and himself had laboured hard in that direction. The views of these colleges were in the records of University College. The failure to unite was not because of narrowness on their part, but on that of University College. As to University College, he drew an opposite conclusion from the Hon. Mr. Blake, that the stronger the universities became the more willing they would be to amalgamate. When the universities were weak they were anxious to amalgamate. But now that both Queen's and Victoria had made progress so rapidly, and had added to their buildings and teaching staffs, this put the idea of university consolidation, in his opinion, beyond the range of probability."

Want of space compels us, with regret, to omit reference to the special features of other excellent addresses delivered on this interesting occasion.

THE INCORRIGIBLES.

A reaction in favor of King Solomon's theories as to juvenile discipline seems to be setting in, at least in England, with regard to boy criminals. The rapid increase in this class is exciting attention, for its repression seems utterly inadequate. The comic journals, *Punch* and *Fun*, propose Lynch Law, and a supple or reliable rattan. Imprisonment in a common gaol, besides the danger of corrupting those not utterly depraved, is an unequal punishment. To one class of boys it is an ineffaceable degradation, while to the hardened gaol-bird it is only a species of uncomfortable hotel. Therefore, Sir William Harcourt, the Home Secretary, expressed the general sense of the community when he refused to sanction the imprisonment of boys or girls in a common gaol. The *Saturday Review*, the London *Times*, and other leading journals, advocate a sufficient but not severe whipping as, on the whole, the most equal punishment.

A similar difficulty meets us in Canada. "What to do with the Juvenile Criminal" is a question debated by several of our exchanges in all parts of the Dominion. But three weeks have passed since the Montreal papers recorded the robbery of large sums, over $700, from one person alone, by a gang of boy-thieves, "truants" escaped from St. Laurent College. The police records of London, Hamilton, and Toronto, show that such cases do not stand alone. We believe that our contemporaries are right in suggesting corporal punishment as the most equal, and, at the same time, the most efficacious in such cases. But the remedy should be deeper—should meet the source rather than the consequences of the evil. That source he believed to be two-fold: in the first place, TRUANTISM; in the second place, the free circulation of literary garbage, not exactly indecent, but sensational, vulgar, slangy, holding up the worst and most degraded examples, and treating with coarse jest, devoid of wit as of truth, all that young people ought to be taught to honor.

The best remedy for the former of these evils we believe to be that proposed by School Inspector Hughes to the Toronto School Board—the establishment of a school expressly for the class of truants.

For the second evil we claim that it is the duty of the Minister of Education to take measures by obtaining the consent of the Legislature for the establishment of a censorship of juvenile literature. It may be said that it is impossible altogether to suppress the sensational dime novel. It is true that those who have imbibed a morbid taste for such things, can perhaps always get at them, just as those who crave for the filth of the *Police Gazette* and other literature of the cesspool can always procure what they want. But we speak in the interest of the great number of children who know nothing of such things till they are tempted by the flaming broad-sheet that fills every print-shop window. There never was a time when good juvenile literature was so abundant as now. Let a little prompt action on the part of the Education Department make a clean sweep of "Mr. Jack Harkaway," of the "Boy Pirate," and all such poisonous trash, the mischief done by which to mind and morals is simply incalculable.

THE UNIVERSITY OF TORONTO.

The recent gathering at the Installation ceremony must have been a subject of pride to all who take interest in that great system of public education in Canada of which the National University is the apex and crown. With full and fitting honors to the retiring President, his successor, Professor Wilson, assumed his official place. The Minister of Education deserves the thanks of all interested in the University of Toronto for his choice of one whose services as Professor have been given for a period of twenty-seven years, whose public-spirited sense of duty has during that period made him foremost in all good works for the benefit of education and morals, and whose published writings, to the honor of Canada, have long taken a foremost place in the literature of the world.

President Wilson's address exhibited a gratifying view of the great advance made by the University during the twenty-seven

years in which he has been familiar with its working. He showed by statistics the increase ten-fold of its matriculants, and pointed with justifiable pride to the high position held by its graduates in society, in the professions, and the public service. The staff of the University is about to be strengthened by the addition of two gentlemen selected by the Minister of Education, by Professor Wilson, and others in whose judgment the public are surely justified in placing confidence, as the best men that can be found to fill their relative positions.

In speaking of the present prosperous and promising condition of the University, President Wilson added one sentence which, in view of the criticism so abundantly volunteered of late by irresponsible outsiders, seems to convey a suggestion of sarcasm, as well-applied as it is delicate : "It were to be wished that Utopian reformers would allow growths so vigorous room to grow."

IMPROVEMENT OF SCHOOL BUILDINGS.

At several of the late Teachers' Associations papers have been read and discussions held as to the best way to "Make the School Attractive." Stress has been laid, and, we think, most deservedly, on the importance of brightening and beautifying the interior of the school building. To little children just beginning their school life, it is well that the school room should wear a pleasant and inviting appearance ; for all scholars, a few pictures, a few flowers, will rest the eye and make the task work easier by pleasant surroundings ; the humanizing effect of learning to value beauty, neatness and order, for their own sake, will be a valuable lesson whose effect will make itself felt in the improved appearance of home in future years. And one most valuable effect of attention to this subject will be, not only that the constituents of school sections will be more willing to go to some little trouble and expense for the preservation of school buildings in which they see both teachers and scholars take practical interest, but that the care and adornment of the school may be made a bond of sympathy and common subject of interest between teacher and pupils. In the spring and summer the play-ground might be surrounded, or at least bordered at the front, with a margin of flowers. These might be divided into beds, each to be assigned to the care of a partial child. In winter, painted boxes, neatly made, might contain flowering plants, each of which should be under the charge of a scholar. Not only sweeping, but window-cleaning and painting, might be undertaken in common by teachers and scholars. At a very small expense, plus a little cheerful alacrity and ready example of helpfulness, the school room might be made to wear an appearance of neatness, and even of beauty, in which the scholars would soon learn to take pride. Every such lesson has its moral value.

SUPERANNUATION OF TEACHERS.

A letter on this subject appeared in the *Globe* of Tuesday, October 19th, over the signature "Magister." He dwelt on the smallness of the pittance which the present fund promises, a result of which is that few contribute the four dollars a year required except the male teachers in the Public Schools, who are compelled to do so by the regulations. He suggests the following amendments in the Superannuation System :

1. That the annual fee be not less than $10 a year.
2. That the law should apply to female as well as male teachers.
3. That H. S. teachers should also come under the provisions and requirements of the fund.
4. That a fee varying from $10 to $50 be exacted from everyone before obtaining a third, second or first-class certificate, and also from University graduates or undergraduates before receiving certificates as head masters or assistants in high schools, the superannuation fund being increased by the amount thus raised.
5. That no part of the amounts paid be returned to a teacher who retires from the profession for other duties, unless at a certain age.
6. That after 25 or 30 years' service, a teacher should have the privilege of retiring with a superannuation allowance.
7. That the allowance should be a respectable and definite amount.
8. That some inducement should be offered to teachers to advance in the profession by giving to those who secure higher certificates or take a University course increased claims on the superannuation fund.

To make the annual payments optional would never do. As female teachers compete with male teachers, and serve to keep down salaries, they should also pay a license for their privileges.

How much attention is being attracted to this most important question, the reports of the conventions in the present issue of the JOURNAL will show. We invite discussion of this subject in our columns. Meanwhile we think "Magister," whose programme of reform is a much more sweeping one than any of those endorsed by the conventions of last month, has made at least one good point. It is this. Sentimental reasons ought not to prevent the Department from requiring female teachers to be under obligation to contribute to the Superannuation Fund equally with males. If ladies come forward to compete with men in the profession of teaching, they should surely do so under the same conditions. As a fact, the female teachers exclude a considerable number of male teachers from schools, which would otherwise have to pay a better salary and employ a male teacher. But, for physiological reasons, it would be fair that the female teacher should be eligible for superannuation, and at an earlier age than the male teacher.

—Our readers will see, by the circular of the Minister of Education in the Official Department of the *Journal*, the interpretation which he gives of the 29th clause of the Amended School Act of 1879. We have frequently pointed out the fact that the clause is directly at variance with the essential portion of the school law requiring School Boards to provide adequate accommodation for the school population of the sections or municipalities which they represent. Mr. Crooks recognizes this fact, and holds that the obligation to provide accommodation still rests with School Boards, and that Councils can, not legally refuse, even by "two-thirds majorities," to grant the money required for this purpose. We would suggest to the Minister of Education the propriety of either removing the 29th clause altogether, or remodelling it so as to make a clear distinction between providing accommodation for those pupils who have no school to attend, and the erection of a new school to take the place of an old one. In the latter case it might be wise to place a check on School Boards; in the former it is unjust to do so.

—The following is given on the authority of the *St. James's Gazette*. It may be taken by teachers generally as an example of tact:—

"A discovery of a painful nature was made on the 25th of August by the Professor of Latin and the Harp at the Wilson Female Seminary of Redfield, Massachusetts. The professor, while passing through the corridor to his room at a late hour, heard a sound of revelry in room No. 11. He also smelt the fumes of tobacco. To climb upon a chair and peep through the fanlight was the work of a moment, and the spectacle that met his eyes was sufficient to make his blood run cold. Twelve young ladies, with their back hair down, were seated round a table smoking cigarettes, drinking cold tea, and occasionally singing in subdued voices. Descending from his perch, the professor at once reported the affair to the principal, with the names of the culprits. The principal, unwilling to blight twelve young lives by so extreme a measure as expulsion, hit upon another plan after much deliberation. At prayers the next evening he made a brief speech, announcing his intention to add a new study to the ordinary curriculum, but that before doing so he desired to consult with his beloved pupils. He therefore invited the twelve young ladies named by the Professor of Latin and the Harp to meet him in his study at seven o'clock that night. The young ladies, much flattered, presented themselves at the study door at the hour mentioned, and were received with grave courtesy by the principal, who, to their surprise, locked the door and placed the key in his pocket. He also carefully closed the windows, although the atmosphere was stifling. He then addressed them, stating that he had determined to introduce the Theory and Practice of Smoking as a new study. The attempt of certain ambitious students to master the art of smoking without a teacher was, he admitted, extremely creditable; but, as he had decided to undertake the duties of a professor of smoking, he trusted that none of his dear young friends would try to smoke by the light of nature. Filling a large pipe for himself, and producing a supply of strong cigarettes for his pupils, the professor asked all to 'light up,' and the lesson began. The young ladies smoked with vigour, but the tobacco soon took effect upon them. In twenty minutes Miss Sally Smith dropped her cigarette and sank upon the sofa. Five minutes later, Miss Betty McGinnis followed her example, and at the end of forty minutes every one of the twelve, with the exception of the two on the sofa, were lying on the floor, 'mute and limp, and in their deathly agony wishing they were dead.' The professor himself smoked on until eight o'clock, when he asked with great surprise and tenderness 'if anything was the matter;' but receiving no answer beyond inarticulate groans, opened the windows, unlocked the door, and summoned the matron. It was two days before the smoking class made its appearance, and then the young ladies looked, as the washerwoman observed, as if 'they had been wrung out and drawed through a knot-hole.'"

—In the past number of a new Educational bi-monthly, the following sentence occurs in an article from the pen of Dr. McCosh:—"Education would greatly be stimulated by each State having a system of superintendence, general and local, by highly educated and well-trained superintendents." In this respect we are far ahead of our go-ahead cousins across the Lakes. What they are striving for we have attained. All our schools are under the direct supervision of well-educated, well-qualified, and, on the whole, well-remunerated Inspectors. The appointment of these inspectors rests with the County Councils, and the manner in which they have discharged this important trust augurs well for the future progress of our Educational System. The Council of Lanark has lately appointed MR. FRANK MITCHELL, B.A., as Public School Inspector. We congratulate the County. No better appointment could have been made. Mr. Mitchell received his early training at the Whitby High School, then under the Head Mastership of Mr. Kirkland, where he greatly distinguished himself, not only for his abilities, but also for his great industry and capacity for work. After acting as Assistant for some time in Whitby, he taught several Public Schools with great success, subsequently matriculating in the University of Toronto, attaining honour in Mathematics, and a high standing in the other departments. During his University course he also obtained honors in the Departments of Modern Languages and Metaphysics. In 1875 he was appointed Head Master of the Perth High School, then in a depressed condition, now, we understand, soon to take its place among the Collegiate Institutes. This is mainly owing to Mr. Mitchell's ability and untiring energy. That he will exemplify these qualities in a still higher degree in his new sphere, we have no doubt, and that the Public Schools of Lanark will soon be as distinguished as the Perth High School for good scholarship and good government.

The following letter to the *Mail*, referring to the questionable means adopted by certain well-known masters to advertise their Institutes is to the point, and sustains the remarks on the subject contained in an article in the last number of the JOURNAL. It has been sent to us for publication.

SIR,—Will you kindly allow me the use of your columns to call attention to the very objectionable practice which is indulged in by some High School Masters, of sending advertisements broadcast through the Province cracking up their own schools for the purpose of obtaining pupils from outside their own districts?

The High Schools and Collegiate Institutes of Ontario are County and not Provincial schools, and the practice above mentioned is simply "sheep stealing," to say nothing of the contemptible egotism, and, in some cases, even deception involved. Nor can it be defended on the plea that it is for the public good. I will venture to say that at the present time there is scarcely a county in the province where students may not receive as good and as thorough a training in their own High Schools as anywhere. It is a great mistake to suppose that because one school has eight or ten masters and another only three or four, better work is done in the former than in the latter. Any one acquainted with the matter knows very well that six recitations a week, when the class is very large, are not more beneficial to the individual members of the class than half that number of recitations when the class is much smaller. Very much, indeed, depends upon what is known as individual instruction. More might be said, but I do not wish to trespass too much upon your space. Let each High School Master do his work faithfully and well in a quiet and gentlemanly way, and leave all "tricks of trade" to the so-called business colleges, to pettifoggers, and quacks.

Yours, &c.,

27th August. HIGH SCHOOL MASTER.

The Artisan's Institute of London, Eng., has opened classes for the practical and scientific instruction of apprentices and workmen in the various trades, such as carpenters, joiners, bricklayers, masons, modellers and metal workers. Would it not be well for Mechanics' Institutes to devote their attention to the practical education of young mechanics, druggists, clerks, &c., and leave instruction in the school branches to night schools conducted by Public School Boards? These might become an established part of the public school system, if the Minister of Education would recognize them to the extent of giving a grant towards their maintenance, as is done for the day schools. We are glad to see that other cities and towns are disposed to follow the lead of Toronto in opening evening classes for those who long for education, but cannot attend school during the day.

We have read with pleasure the essays and discussions on this most important subject at the Convention held last month. It is not too much to say that on a right use of the hours spent at home depends much of the efficiency of the school hours. One important suggestion was put before the Teaching Profession at one of the conventions. It was that the teacher really interested in his calling will make a careful study of the best educational journals, those which represent the solidarity of the profession, not a party or a faction. A new educational magazine is about to be issued by the firm which publishes the CANADA SCHOOL JOURNAL, a leading feature of which will be a series of carefully arranged Examination Papers, partly original, partly selected, chosen by wel-lexperienced hands with a special view to the requirements of teachers. There will also be a thorough review of the best current educational literature, and original essays by some of the best known writers in Canada on subjects connected with the Examination course and general scholastic interests. This magazine will be a *résumé* of the best contemporary literature from the teacher's point of view.

We are glad to notice, that in several of the United States the State Teachers' Associations are recognized by the education departments as important parts of the educational machinery of the State, and full reports of their proceedings, including the addresses delivered, embodied in the Annual Report of the Chief Superintendent. This is right. The Minister of Education in Ontario kindly expressed his warm interest in the proceedings of the Provincial Teachers' Association, and his high opinion concerning the judgments given by that body. We strongly recommend him to follow the example of the Superintendents of the States referred to, as well as of the Province of New Brunswick, in having the papers read, with the discussions, published by the Government. It would relieve the Association of an annual burden, and would disseminate more widely than is now done, the results of the deliberations of the foremost teachers of the country. It would also be a step towards a departmental recognition of the Association.

The *Christian Helper*, an organ of the Baptist Church, records the manly and spirited utterances of the leaders of that body in view of the probable withdrawal of State aid from denominational colleges. The Baptists neither invite nor deprecate such withdrawal. They are prepared in any event to stand by their flourishing institution of Acadia College. A similar spirit of independence, judging from the proceedings reported in our present issue, animates the directors of Queen's College, Kingston. Should University Consolidation not be carried into effect, and that soon, it is evident that in view of the increased needs of the national system of education, all State grants must be, and ought to be, withdrawn from denominational colleges. The spirit of independence shown by those to which we have referred is the best way to meet events which are surely, and not slowly, coming on.

—The system of School Savings Banks has been a great success in Switzerland and in Paris. In one arrondissement of Paris, 80 per cent. of the children contributed, a sum of 15,000 francs being raised. Surely the establishment of such banks would be a valuable lesson in saving and self-help to the school children of Canada. It might divert to useful purposes much that is being spent on poisonous candy and filthy gum, and lays the foundation of so much of that dyspepsia which ruins so many constitutions. If the teacher took charge of the bank, a small fee might be paid weekly for her services by the Government—it would be worth while to pay it, in order to secure such a valuable lesson in frugality and those qualities which go to make the growing generation a source of wealth to Canada.

—Mr. R. Little, Inspector of Public Schools at Halton, is one of those successful teachers whose career is one which may be well held up as an encouragement to conscientious and painstaking teachers. He taught but three schools since his first coming into Halton, and in discharge of his duties was known to be earnest, faithful and laborious. For nineteen years he held the highest grade of certificate granted in Halton. As Inspector, he has been equally efficient and equally popular. A handsome gold watch and chain was presented to him at the late meeting of the Halton Teachers' Association, accompanied by a beautifully designed address, by Mr. C. C. MacPhee.

Contributions and Correspondence.

SCHOOL DISCIPLINE.

BY FRED. B. CHANTLER, SANDHURST.

It is a common error with the general public to judge of a teacher's qualifications and success by his scholarship alone. This opinion, perhaps, is quite correct in the case of professors in Colleges and the larger seminaries, where he is the most successful whose learning is the most profound. In our elementary schools, however, the instructor's knowledge, *per se*, can occupy but a secondary place in aiding him to a proper discharge of his office. A teacher to be efficient has, as he soon learns, to depend on a very different set of abilities, peculiar and general; and not arising, artificially, from the study of mere book lore, but acquired alone by the workings of a nature moderated by experience in the ways of men and the world, so as to become the warp and woof of his character.

In the common school, *to teach* is easy and simple, while *to govern* is a work at once difficult and complicated, on the right performance of which the teacher's success will invariably rest. With these abilities inherent, success may be assured him from the outset of his career. Without them he will be a laggard, clogged and handicapped in the race, until he is relieved from his burden by his after training. As a rule, it is true, a teacher's proficiency can be gauged by the extent of his practice; for nowhere is the fact that perfection comes by practice so specially true as in the work in which he is engaged. Yet, as I said, the talent for governing may be the gift of nature, in which case neither the teacher nor the teacher's office suffers greatly by experience. But many have to begin, and do begin, with no natural fitness for the work, and there a danger lies; for, to let loose such youthful instructors into the midst of helpless children, whose natures, like their own, are yet in the mould, is to play havoc with the forming character. A young teacher, for in-

stance, is placed in charge of a school, and wholly in the dark as to his best mode of procedure or the sacredness of his trust, launches forth with an irregular and extravagant discipline, a system, in fact, short of reckless inexpediency; and with an eye for an eye and a tooth for a tooth, just as his unreasoning incapacity may dictate, he will debase his office and himself, and corrupt or destroy all that is beautiful and noble in those committed to his care, which not all the wisdom of his ripened experience may rectify. It is the duty, then, of the young teacher, from the danger in which he stands of abusing his trust, to diligently supplement his growing experience with observation and study of those principles, the knowledge of which can alone command success. To the consideration of these our subject leads us.

As anarchy and political disruption are the inevitable consequences of despotism in a state, so a domineering harshness in that miniature state, the school, is always fatal to the best interests of both teacher and taught. It is folly to suppose that children, any more than men, can long be kept down by force. A spirit of resistance to restraint is a prominent element in a child's nature, and when he imagines himself the victim of severity or intimidation, his fear gives place to defiance. All passionate, violent, or vindictive action, then, should be sedulously guarded against. The sting of injustice has caused the stab to many a tyrant. Then let the unreasonable teacher beware. To thunder out some savage threat; to brandish the ready hand round the tender ears of the helpless victim; to set him, gyrating, top-like; to shake him up or shove him down; or to send him sprawling, like the trembling sailor in the grasp of the one-eyed Polyphemus, at his full length on the mid-floor, and then to belabor him with the pitiless ferule, is the work of ferocious madness, caused, perhaps, as is often the case, by a mere childish petulance at some passing thoughtless misdemeanor, or often by nothing at all but the violence of an unruly temper. This irrational government is, it is true, gradually being driven out of the public school by the humanizing influence of modern philanthropy, and is common only in parental government, which, with the uppermost passion the only law, is like the mother of Lord Byron, whom she alternately kept whipping and kissing all day long. A truth it surely is, that he who would govern others, must first learn to control his own spirit. A man is unworthy of the name, who has not a cool and imperturbable temper, and to the teacher of youth it is an indispensable quality. Easy excitability and hasty violence are not only fatal to the teacher's influence, but lead him into constant difficulties, which, with calmness and tact, he would escape.

Next to control of the feelings, he should have control of the tongue. As in the world, so in the schools, he is the most respected who speaks seldom, but discreetly. Those modern educators who are always preaching to young teachers about earnestness and energy before the class, overstate, I think, its importance. It is not wise, I am persuaded, to distract the pupil's attention with a gymnastic fussiness, nor to mystify his understanding with a noisy prolixity; yet that is the practical outcome of this advice on many, until experience moderates their ardor. Learning cannot be got second-hand. It comes only by the student's own labor, and can not be talked into him by any efforts of his teacher, who is, or should be, rather a help by the way, or a light to guide him in his work. If the pupil is to learn a lesson, let him set to work and study it, and, when that is done, little will be left for the teacher but to examine the thoroughness of its preparation; the scholar will be an attentive listener to what he tells him only so far as he is relieved from the difficulties which are suggested by his previous enquiries. Also, in the general management of the school, a dignified reticence is the very best of policy. Everywhere it is suggestive of authority. It gives the teacher an air of quiet strength and hidden power which goes far to establish his supremacy, and the example of quietness, too, will act on the children in making them less talkative and unruly.

A sudden breach of discipline or unexpected difficulty will often arise to embarrass his ingenuity when a rash or precipitate action might endanger his authority. The power to perceive his wisest course, and with perfect self-possession to dispose of the trouble, is a quality to be highly valued. For instance, in the case of insubordination by a senior pupil, a teacher will often sacrifice his influence, and even his situation, by the violent overflow of his righteous indignation, thereby arousing a still greater resistance, and then of course the strongest wins. On the other hand, to hesitate or betray uneasiness is equally dangerous in such a case. To show a temporizing fear of decided action is to lead the pupil to believe the teacher afraid of him, and then as a sequence open rebellion. Patience, tact, and firmness of manner will best cure such, while hardness would only aggravate the distemper. Children never like to appear before their playmates as having been conquered. Often a pupil is found whom punishment does not humble, and he will laugh at his triumph over the baffled teacher, whose influence and temper are thus sorely strained. This often leads to a course of unseemly and vindictive badgering, which, if successful, is at the cost to the pupil of a broken spirit and rising evil passions, and to the teacher of his own best interests and self-respect.

Corporal punishment is gradually, I think, becoming obsolete. Teachers are beginning to see that it is unpopular with the parents, and therefore to be avoided by him who aspires to success in his profession. They find, too, that while, as an expedient to produce an immediate effect, it is the most quick and ready; yet, when viewed in its continued effects, its tendency is to brutalize its victim and to debase the teacher inflicting it, who is thus turned into a mere jail-keeper, whose duty it is to publicly flog the refractory. But to renounce it altogether is to lose a powerful incentive to obedience, namely, fear. It should rather be kept as a force in reserve, which, like the puissant Jove, sleeping, can thunder terror forthwith by its awakened wrath. Punishment, corporally, is said by some to be occasionally a necessity, and in rare cases to exercise a beneficial influence on the culprit and the general discipline. But if its general tendency is demoralizing, its effects are the same, whether administered often or only seldom; and if it is dispensed with, except in rare cases, might not the teacher, with a little extra ingenuity and patience, be able to avoid it altogether, and thus relegate it to the confines of its own proper domain—the slave market?

In dealing with younger children, the natural awe of the teacher's person is surely enough to command obedience. If we, six feet high and wise as Gullivers in the crafts of the wily world, were placed in charge of some swarthy giant, twenty or twenty-five feet high, would not our obedience be quite a matter of course? Just such a relation does the little scholar bear to the great big teacher. His authority, then, if exercised with any reason, ought to be supreme. If they sometimes become restless and mischievous, it is because they cannot help it. It is but the protest of nature at restraint, and the working of that active young life which no healthy scholar is without. Let the teacher turn all this to account by keeping them always busy with something at once amusing and useful. Slates, pictures, drawing cards, blocks, objects, and blackboard, with a little friendly encouragement from the teacher, will keep the little folks occupied all day long.

With the larger pupils, too, it is of the first importance to have them always busy on some specific work. Idleness and mischief always go together; when they get tired of one subject, a change of study or some novel exercise will arouse their flagging energy.

No teacher can exercise an intelligent discipline until he has mastered all the mysterious windings of child nature, so complicated, so varied and so full of beauty to the appreciative observer. The ingenious Edison, it is said, will sit all day long, brooding over nature's laws and actions, and, in his inspired moments, with magic wand, will summon those inscrutable powers, charmed at his master call, to play their fantastic tricks at his bidding. Just so in the innocent, simple child may be discovered shapes and powers divine which the skilful teacher may manipulate at will. Children are found to vary much in their capacities and sensibilities. Some are dull and sluggish; others are bright and active. Some are precocious in their studies; others are provokingly stupid. Some are bold and fearless; others are weak and timid. Some are coarse grained and corrupt; others are gentle, refined, and pure. There is no Persian code, then, that can with any justice be made to regulate such opposite natures, therefore the greatest care should be taken by the teacher to adapt his encouragements, reproofs and punishments to the exigencies of each case. Those who are gross and litttle affected by praise or blame require firm and rigorous measures, but it is cruelty and nothing else to be equally severe with those of a more delicate organism, to whom "a harsh word or cross look will often sadden the young face and fill the eye with tears." This is a beautiful trait from which the teacher may learn the power of gentleness and perceive how potent in youthful minds is the strength of well directed authority.

It is a common error with a teacher to show a chilly reserve in his relations with his pupils, thinking thus to inspire an awe of his majesty, but which in doing this will also alienate their sympathy. Geniality, not gross and grovelling, but quiet and friendly, tending to engender mutual good feeling and disarm hostility, brings him into closer and happier relations with their dispositions, and thenby his own potent example, may instil into their minds his riper virtues. He should not disdain, then, to show a pleasant face at their fun and jokes, and participate in their outdoor games. By this means alone, can he discover their true habits, and check the spread of the seeds of evil sown by the vicious, the dishonest, and the untruthful.

The teacher in the discharge of his duties should not neglect to cultivate those external accomplisnments which go so far to make up what is called a gentlemen. The poor dominie has always been a butt for the shafts of wit as much in the days of Horace and Goldsmith as now. He knows they say that two and two make four to a demonstration, and can parse tweedle-dum and tweedle-dee as well as any Cobbett; but put him into the world and take away his logarithms and syntax and he is a helpless, lost man. This derision by the social bon-tons and town flunkies may be enjoyed by the superficial, but it is only the rough exterior they see and not the jewel within. From the circumscribed nature of the teacher's duties, he often acquires a singular and narrow manner, which, considering his general worth, associates unjustly with the name pedagogue, quite an offensive idea. But I am wandering from the subject. What I wished to say, was that children are easily influenced by appearances, and the personal authority of one with a noble bearing, with an erect and lofty carriage, a pleasing address, a graceful and unfaltering speech, and a keen penetrating glance, will be altogether different to that of the careless, awkward, sloven, with a vulgar speech, full of old mother saws, whose lounging gait, and listless manner, with no fire in his eye nor command in his tone, soon render both him and his office despicable. It is a true saying that the teacher makes the school. In it is reflected with mirror-like clearness his own true character. Not only can its system and order be determined by his own level head and strong mind, but the good feeling, honor, honesty, and virtue, in every shape will largely be the counterpart of his own moral *stamina*.

There are none, not even the parents, whose influence is so potent for good or evil as that of public school teachers. They are the primal laborers in the vineyard of humanity. On the teacher's work in the aggregate largely depends the condition of the succeeding generation. To his individual duty, then, let each one devote himself, with ardor and with love. His reward, apart from mere fleeting salary and position, is as lasting as humanity itself.

Once might have been seen, in old Moscow, throng upon throng of eager people, crowding round where a bell was being made, Mothers, maidens, children, old and stalwart men were there. Mothers came with heavy plate, maidens brought their glittering jewels, children their gaudy trinkets, and men their heavy wealth, to richen the mellow tones of the great bell. Each one throws in his gift with a blessing, and soon the precious metals are a seething liquid, intermingled. When the great mass comes forth moulded, and hangs in its high tower, that mighty throng is hushed with awe and gladness. Soon is heard, by all, that bell pour forth its magic sounds, sometimes as rolling thunder in the distance; again they hear it, tinkling like the far off winter bells, and anon with sweeter symphonies, like the murmur of the gentle evening zephyrs. There they stand, entranced, when with one glad shout they rend the air in honor of the bell, till heaven's vaulted roof re-echoes back its praises. Why are they so joyful? Did they not make it? Does not each one of them feel that his own gift added sweetness to its tones? Why should they not be glad then? It is their work, and right well may they rejoice to hear it ringing out their noble bounty, for now and forever. So a band of noble hearted teachers, who have thrown their life, their love, their whole ambition, into the mould that forms the character of youth, will hear their praises ringing down the ages, just as that grand old bell rang out their deed to the happy company that day in ancient Moscow. Let the teacher then buckle to his work. His labors, like the widening circle of the pebble's, rippled on the calm waters, will act and react on humanity to come, until time is no more. His motto might well be "Pingo eternitatem," I paint for eternity.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

NOTE ON TEACHING HORNER'S METHOD OF DIVISION.

The following method of teaching Horner's Synthetic Division has occurred to us. It has the advantage of shewing the learner the relation the short method bears to ordinary division, what terms are omitted in the former, and that the former is merely a more compact arrangement of the work of the latter with the omission of certain terms.

Place on the board an example such as the following:

$$x^2-3x+2)3x^5-5x^4+4x^3+3x^2-5x+2(3x^3+4x^2+10x+25$$
$$3x^5-9x^4+6x^3$$
$$4x^4-2x^3+3x^2$$
$$4x^4-12x^3+8x^2$$
$$10x^3-5x^2-5x$$
$$10x^3-30x^2+20x$$
$$25x^2-25x+2$$
$$25x^2-75x+50$$
$$50x-48$$

Then call attention to the fact that in the preceding we might have shortened the work, or made it simpler in the following ways:

(1) *By converting subtraction into addition by changing the signs of the second lines in each operation.* We really do make the change mentally. This change may best be effected by changing at the outset the signs of the terms of the divisor with the exception of the first, which is not altered for the reasons which appear from (3),—the results of multiplying it by the terms of the quotient do not appear, and it is desirable to keep it as it is that we may obtain the terms of the quotient. On calling attention to this point make the changes required throughout the work.

(2) *By not obtaining the $-2x^3$ of the third line, the $-5x^2$ of the fifth line, &c.* For evidently, the subtractions being converted into additions, we have only to add $4x^3$, $-6x^3$ & $+12x^3$ to obtain $10x^3$. On calling attention to this point, draw chalk marks through the $-2x^3$, $-5x^2$ and $-25x$,—better than erasing them altogether.

(3) *By neglecting to write the first terms in each line* ($4x^4$, $10x3$, &c.), *obtaining them mentally to get the next term in the quotient.* Draw chalk marks through these terms also.

(4) *By not bringing down the $3x^2$, $-5x$, &c., of the dividend.*

Omitting then the cancelled terms, the skeleton of the work will stand as follows:

$$x^2+3x-2)3x^5-5x^4+4x^3+3x^2-5x+2(3x^3+4x^2+10x+25$$
$$+9x^4-6x^3$$
$$+12x^2-8x^2$$
$$+30x^2-20x$$
$$+75x-50$$
$$50x-48$$

Take care that terms involving the same power of x (*e.g.*, $-5x$, $-20x$, $+75x$) stand in a vertical column.

Now then, omitting the horizontal bars except the last, lifting each line as it were into a sloping position, so that its beginning stands above the end of the preceding ($12x^3$ above $-6x^3$, $30x^3$ above $-8x^2$, &c.), and pressing the work together vertically, the whole assumes the more compact form

$$\begin{array}{r|l} x^2 & 3x^5-5x^4+4x^3+3x^2-5x+2 \\ +3x & \quad +9x^4+12x^3+30x^2+75x \\ -2 & \quad -6x^3-8x^2-20x-50 \\ \hline & 3x^3+4x^2+10x+25 \mid +50x-48 \end{array}$$

the dividend being written beneath, and the divisor vertically, to save space.

(5) *By neglecting the letters, using coefficients only.*

By this the above reduces to the form

$$\begin{array}{r|llllll} 1 & 3 & -5 & +4 & +3 & -5 & +2 \\ +3 & & 9 & +12 & +30 & +75 & \\ -2 & & & -6 & -8 & -20 & -50 \\ \hline & 3 & +4 & +10 & +25 & 50 & -48 \end{array}$$

SOLUTIONS OF PROBLEMS IN OCTOBER NUMBER.

Intermediate Paper.

1. $\therefore (a+d)^2-(b+c)^2=(a-d)^2-(b-c)^2$;
$\therefore ad=bc$; $\therefore ad+bd=bc+bd$, or $(a+b)d=(c+d)b$.

2. (1) Rationalizing the denominators of the fractions they become

$$\frac{a+\sqrt{a^2-b^2}}{b}-\frac{a-\sqrt{a^2-b^2}}{b}=\frac{2\sqrt{a^2-b^2}}{b}.$$

(2) $=\{a^2-(b+c)^2\}\times\frac{a+b-c}{a+b+c}=(a-b-c)(a+b-c)$
$=a^2-2ac+c^2-b^2$.

(3) On factoring the denominators it is seen that the common denominator is x^4-1, and entire expression equals $\frac{2x^3+x}{x^4-1}$.

The second expression may be obtained from the first by putting $x=\frac{a}{b}$, and dividing by b; $\therefore$ second expression equals

$$\frac{1}{b}\cdot\frac{2\left(\frac{a}{b}\right)^3+\frac{a}{b}}{\left(\frac{a}{b}\right)^4-1}=\frac{2a^3+ab^2}{a^4-b^4}.$$

3. If x, y be the numbers $x+y=2a^3$, $\frac{x}{y}=\frac{a^3-b^3}{a^3+b^3}$, on simplifying;

Adding 1 to both sides of the latter equation

$$\frac{x+y}{y}=\frac{2a^3}{a^3+b^3}$$
$$\therefore \frac{2a^3}{y}=\frac{2a^3}{a^3+b^3}, \text{ since } x+y=2a^3,$$
$$\therefore y=a^3+b^3 \text{ ; and } \therefore x=a^3-b^3.$$

4. $\therefore k^2=x^2+x^2y^2+y^2+x^2y^2+2xy\sqrt{(1+x^2)(1+y^2)}$
$\therefore 1+k^2=1+x^2+y^2+x^2y^2+2xy\sqrt{\quad\quad}+x^2y^2$
$=(1+x^2)(1+y^2)+2xy\sqrt{\quad\quad}+x^2y^2$
$\therefore \sqrt{1+k^2}=\sqrt{(1+x^2)(1+y^2)}+xy$.

5. (1) Common denominator is $(1+2x)(7+2x)$, $x=\frac{7}{8}$.

(2) $x^2-8x+16+15+\sqrt{x^2-8x+31}=5+15$
$\therefore \{\sqrt{x^2-8x+31}+\frac{1}{2}\}^2=20+\frac{1}{4}=\frac{81}{4}$
$\therefore \sqrt{x^2-8x+31}+\frac{1}{2}=\pm\frac{9}{2}$
$x^2-8x+31=16$ or 25
$\therefore x=5$ or 3, and $4\pm\sqrt{10}$.

(3) From first $3=\frac{x+y}{xy}$, or $\frac{1}{y}+\frac{1}{x}=3$
also, $\frac{1}{x}+\frac{1}{z}=1$
$\frac{1}{x}+\frac{1}{z}=-1$

Thence $\frac{1}{x}=\frac{5}{2}$, $\frac{1}{y}=\frac{1}{2}$, $\frac{1}{z}=-\frac{3}{2}$,
or $x=\frac{2}{5}$, $y=2$, $z=-\frac{2}{3}$.

6. That is, solve the simultaneous equations $x^2+xy=(a-b)^2$; $xy+y^2=4ab$.

$$x=\pm\frac{(a-b)^2}{a+b},\quad y=\pm\frac{4ab}{a+b}.$$

7. $360-x$=alcohol in after first is taken away; and then $\frac{360-x}{360}$ = fractional part of each gallon that is alcohol. Hence in second taking, $\frac{360-x}{360}$ of $(x+84)$ gallons of pure alcohol is withdrawn. Hence

$$x+\frac{360-x}{360}(x+84)=180,$$

whence $x=576$ or 60, 60 being answer required.

8. (1) For by the theory of quadratics θ may have one or other of two values whose sum is a, and whose product is b.

(2) Subtracting $(a-a')x+(b-b')=0$; and substituting this value of x in the first equation $(b-b')^2-a(b-b')(a-a')+b(a-a')^2=0$, the expression required.

(3) Multiplying the second by x and subtracting
$(a-\alpha)x^2+(b-\beta)x+c=0$; also $x^2+\alpha x+\beta=0$.

Thence eliminating x as in preceding,

$$\left(\frac{c}{a-\alpha}-\beta\right)^2-\frac{b-\beta}{a-\alpha}\left(\frac{c}{a-\alpha}-\beta\right)\left(\frac{b-\beta}{a-\alpha}-\alpha\right)+\frac{c}{a-\alpha}\left(\frac{b-\beta}{a-\alpha}-\alpha\right)^2=0.$$

9. (1) Book-work.

(2) $\frac{x+a}{\sqrt{x^2+a^2}} \gtrless \frac{x+b}{\sqrt{x^2+b^2}}$

accd. as $\frac{x^2+2ax+a^2}{x^2+a^2}-1 \gtrless \frac{x^2+2bx+b^2}{x^2+b^2}-1$

accd. as $\frac{ax}{x^2+a^2} \gtrless \frac{bx}{x^2+b^2}$

as $ax^2+ab^2 \gtrless bx^2+a^2b$

as $(a-b)x^2 \gtrless ab(a-b)$

as $x^2 \gtrless ab$. If $a-b$ be negative, it will be according

as $ab \gtrless x^2$.

First-Class Paper.

1. (1) Todhunter, § 501.

(2) It may be easily shewn by geometry that if a circle can be described through any four consecutive points of a polygon, any one of such circles passes through all the angular points. Hence the answer required is one circle. The question is intended as a "catch" on the geometrical problem.

2. (1) $x(1-x)^{-2}=x+2x^2+3x^3+\ldots+nx^n+(n+1)x^{n+1}+\ldots$

$(1-x)^n=1-nx+\frac{n(n-1)}{\lfloor 2}x^2-\ldots.$

$\therefore$ Multiplying these identities, coefficient of x^{n+1} on right-hand side is

$$n+1-n.n+(n-1).\frac{n(n-1}{\lfloor 2}-\ldots. \quad (1)$$

While coefficient of x^{n+1} on left-hand side is coefficient of x^{n+1} in $x(1-x)^{n-2}$, which is zero. Hence (1) is zero.

(2) $\frac{-\frac{2}{3}.-\frac{5}{3}}{\lfloor 0 \rfloor 1 \rfloor 1}(3)(-4)+\frac{-\frac{2}{3}.-\frac{5}{3}.-\frac{8}{3}}{\lfloor 2 \rfloor 0 \rfloor 1}(-2)^2(-4)+\frac{-\frac{2}{3}.-\frac{5}{4}.-\frac{8}{3}}{\lfloor 1 \rfloor 2 \rfloor 0}$

$(-2)(3)^2+\frac{-\frac{2}{3}\ldots\ldots-\frac{11}{3}}{\lfloor 3 \rfloor 1 \rfloor 0}(-2)^3(3)+\frac{-\frac{2}{3}\ldots\ldots-\frac{14}{3}}{\lfloor 5 \rfloor 0 \rfloor 0}(-2)^5.$

3. (1) In Gross's Algebra the Exponential Theorem is established, and $\log_e(1+x)$ is then deduced. In Todhunter $\log(1+x)$ arises in the course of the investigation which establishes the Exponential Theorem.

(2) In 2 log (1—3x)the coeffi. of x^n is $2\left(-\frac{1}{n}3^n\right)=-\frac{1}{n}.\frac{6^n}{2^{n-1}}$

Also $\log\{1-6x(1-\frac{3}{2}x)\}$

$=-[6x(1-\frac{3}{2}x)+\frac{1}{2}\{6x(1-\frac{3}{2}x)\}^2+\ldots+\frac{1}{n}\{6x(1-\frac{3}{2}x)\}^n+\ldots]$

In which the coefficient of x^n is

$$-\left\{\frac{1}{n}6^n-\frac{1}{n-1}6^{n-1}.(n-1).\frac{3}{2}+\frac{1}{n-2}6^{n-2}.\frac{(n-2)(n-3)}{\lfloor 2}\left(\frac{3}{2}\right)^2-\ldots\right\}$$

and equating these coefficients of x^n the required identity is obtained.

4. (1) Book-work.

(2) $1000=I\{(1\cdot04)^{-\frac{1}{6}}+(1\cdot04)^{-\frac{2}{6}}+\ldots.+(1\cdot04)^{-\frac{120}{6}}\}.$

$=I(1\cdot04)^{-\frac{1}{6}}.\frac{\{(1\cdot04)^{-\frac{1}{6}}\}^{120}-1}{(1\cdot04)^{-\frac{1}{6}}-1}=I\frac{(1\cdot04)^{-20}-1}{1-(1.04)^{\frac{1}{6}}}$

$\therefore I=1000\frac{(1\cdot04)^{\frac{1}{6}}-1}{1-(1\cdot04)^{-20}}$ Ans.

5. The value of the mortgage two months from this, when the first instalment is to be paid, is

$100+100\{(1\cdot04)^{-\frac{1}{2}}+(1\cdot04)^{-\frac{2}{2}}+\ldots$ 25 terms.$\}$

And the present value of this for the two months is found by multiplying it by $(1\cdot04)^{-\frac{1}{6}}$, giving

$$\left\{100\frac{(1\cdot04)^{-13}-1}{(1\cdot04)^{-\frac{1}{2}}-1}\right\}(1\cdot04)^{-\frac{1}{6}}.$$

6. Book-work.

7. (1) Todhunter, § § 631, 630.

(2) Let z be the number, and x and y the quotients; then $13x+7=z=14y+2$. Thence the general value of x is $5+14t$, and the succession of values is 5, 19, ... 61, 75, ... 75 is the value of x which makes z nearest to 1000; and $z=982$.

8. (1) The scale of relation is $1-5x+4x^2$. Whence series

equals $\frac{1}{(1-x)(1-4x)}=-\frac{1}{3}.\frac{1}{1-x}+\frac{4}{3}.\frac{1}{1-4x}$

$=-\frac{1}{3}\{1+x+x^2+\ldots\}+\frac{4}{3}\{1+4x+(4x)^2+\ldots..\}$

Hence general term $=\frac{1}{3}x^n(2^{2n+2}-1)$.

The rates of the $(n+2)$th to this is $x\frac{2^{2n+4}-1}{2^{2n+2}-1}=x\frac{2^2-\frac{1}{2^{2n+2}}}{1-\frac{1}{2^{2n+2}}}$

$=4x$ ultimately. Hence that the series may be convergent x must be less than $\frac{1}{4}$, (Todhunter, § 559).

(2) Revert the series, *i.e.* assume

$x=A+By+Cy^2+Dy^3+\ldots..$

$\therefore x=A+B(x+2x^2+3x^3)+C(x+2x^2+3x^3)^2+\ldots$

Equate coeffs. of x;

$A=0$, $B=1$, $2B+C=0$, $3B+4C+D=0$, &c.

$\therefore A=0$, $B=1$, $C=-2$, $D=5$, &c., and

$x=y-2y^2+5y^3+\ldots$

9. $u_0=\frac{1}{a+a^{-1}}$, $u_1=\frac{1}{a+a^{-1}}-\frac{1}{a+a^{-1}}$, and the law may be shewn to hold for these terms, for $u_0=\frac{a-a^{-1}}{a^2-a^{-2}}$, $u_1=\frac{a^2-a^{-2}}{a^3-a^{-3}}$.

Assume that it holds for the n^{th} term, then

$$u^{n+1}=\frac{1}{a+a^{-1}-\frac{a^{n+1}-a^{-(n+1)}}{a^{n+2}-a^{-(n+2)}}}=\frac{a^{n+2}-a^{-(n+2)}}{a^{n+3}-a^{-(n+3)}}$$

Hence if the law holds for the n^{th}, it holds for the $(n+1)^{th}$; but it has been shewn that it holds for the second; hence it holds for the third; hence for the fourth, &c.; and hence generally.

PROBLEMS FOR SOLUTION.

1. Three gamblers A, B, C began to play with \$6.00 altogether in their possession. They played three games and each of them had \$2.00 at the close. In the first game A and B lost and the winner doubled his money; in the second A and C lost and the winner doubled his money; in the third B and C lost and

the winner doubled his money. How much had each at first?

A. MONTGOMERY, Glengarry.

2. If *A* tells 2 truths to 3 falsehoods, *B* 7 truths to 3 falsehoods, *C* 8 truths to 3 falsehoods, and *D* 11 truths to 5 falsehoods; what will be the probability of an event being true, or false, that *A* and *B* affirm and *C* and *D* deny?

3. From *Ray's New Higher Arithmetic*:—My lot contains 135 sq. rds., and the length is to the breadth as 5 to 3; what is the width of a road which shall extend from one corner half round the lot, and occupy $\frac{1}{4}$ of the ground?

L. B. FRAKER, Fayette, O.

R. J. McLAUGHLIN, Norland, and F. T., Wicklow, have sent in correct solutions of Prob. 1 of last issue (Alligation question), obtaining for result 3 sheep, 15 lambs and 2 kids.

D. R. BOYLE, W. Arichat, C B. Several solutions of the problem you enquire concerning will be found in the CANADA SCHOOL JOURNAL of May, 1880, under the caption "A Celebrated Theorem."

Practical Department.

TEACHING HISTORY TOPICALLY.

BY JAMES L. HUGHES.

A large proportion of pupils leave school believing that history is but a means of testing their memories, in order that bad marks or other punishments may be given for failing to remember. They have been forced to regard it as a heterogeneous mixture of DATES, *names*, and unrelated events. There is no bond between these events, as they are usually taught, but chronology, and the miserable linking afforded by the names of rulers, alike uninteresting be they names of kings, emperors, governors, or presidents. For, eign wars, civil wars, commercial progress, the extension of the influence of the church, political intrigues, the development of the people, constitutional growth, literary culture, and educational advancement may be found side by side in the same chapter, utter strangers in everything but the accident of having occurred about the same time. The same old kings who ruledthe nations have continued to rule the historians and teachers until very recently; indeed, do still govern the vast body of teachers in their teaching of history. The constitutional, intellectual, and religious development of a nation are dished up in scraps as carved by the various kings; great principles, and the mighty movements of true progress, are treated as secondary matters, and tacked on as mere ornaments for the coats of successive sovereigns. The rulers with their whims, their physical, mental and moral peculiarities, and their *dates*, are allowed to occupy the first place in school histories, and the genuine work of the world is seen through the crevices between the kings. Events are fitted to the sovereigns, who should appear in history merely as they influence events.

This is a fundamental error in writing or teaching history. Dr. Arnold held that the record of the development of the "race, institutions and religion" of a country constituted its real history, and modern writers and thoughtful teachers are acting on this rule.

The most reasonable method of teaching this subject is to select the leading factors of the life and development of a nation, and to carry on the history of each factor consecutively, without reference to either of the others, except in so far as it has a direct influence upon the one under consideration. In order to do this more effectively, the teacher should, first, in a single lesson, give his pupils a "bird's-eye view" of the whole history to be studied, that they may have a general idea of the subject in its leading features. In this lesson he should fix in the minds of his pupils the great central points of the subject, so as to divide it into periods. These periods may be marked out according to the views of the teacher, but for practical purposes it will be found best to make the dividing lines correspond with the formation periods in the growth of the country. In Canadian history, for instance, these periods might be

1. Indian ....
2. Discovery..... 1001 ... to ... 1534.
3. French..... 1535 ... to ... 1763.
4. English..... ... 1763 ... till present.

The English period should be again subdivided as follows.

1. From the *Conquest* ... ..1760... to the *Separation* ..... 1791.
2. " *Separation* ...1791... " *Union* ..... 1841.
3. " *Union* .....1841... " *Confederation* ... 1867.
4. " *Confederation* 1867.. till the present time.

The dates given are *essential*, and when learned they serve as guideposts for the location of the events to be learned afterwards. These periods will then become "pigeon holes," into which the facts of history may be arranged as documents are in a well-ordered office.

Having given a general idea of the history of any country, and its natural division into periods, the teacher is ready to proceed with the filling in of the necessary details. These should be many or few according to the age of the pupils. Whether many or few, however, they should be taught *topically*. Instead of presenting facts relating to all kinds of events promiscuously, as they occurred, and would be recorded in a diary, they should be classified under a few leading heads, and the consecutive history of each class given during the period under consideration. This method is recommended for the following reasons:

1. *Events are more easily learned and remembered than if taught by any other method.* A merchant who wishes to learn the results of his business transactions, and the progress of his various trade relationships at the close of a year, might possibly do so by examining his Day-book alone; but it would require the labor of months to accomplish what he could do in a few hours by consulting his Ledger. Histories are usually merely the Day-books of the business of nations, and so students read them through and through without either remembering clearly the events related, their causes, or their immediate or ultimate bearing upon any of the departments of national life and progress. The events of history should be grouped in Ledger form, or, in other words, taught *topically*; and as with the merchant, so with the student much time will be saved, and much better results obtained. The historical topics, or "Ledger headings," would vary slightly with different periods and nations, but the following will generally include all that are necessary: 1. External History or foreign relationships, wars, &c.; 2. Constitutional Growth; 3. Religion; 4. Literature; 5. Commerce; 6. General Progress.

2. *The teaching of one department of the history of the world facilitates that of every other department.* The events immediately connected with any one of the topics named will have a bearing more or less direct on some, if not all, of the others; so that when the External History has been taught, the Constitutional or Religious History of the same period may readily be fitted to it. Each additional topic taken up paves the way for the more easy learning of those which are to follow.

3. *When one department of the history has been taught, the teaching of each successive department reviews the work that has been done.* The connection already pointed out between the several topics necessitates this reviewing. It is done, too, in accordance with one of the most essential though most neglected principles of the science of education; it is done *incidentally*. The reviewing is done not as a formal lesson, but in natural connection with the teaching of new work, as an essential part of that work. The importance of this fact will be clearly seen by those who have given due attention to the philosophy of education.

4. *By teaching topically, the teacher develops the reasoning powers of his pupils, and trains them to read history intelligently after they leave school.* It is most desirable that students of history should be led to trace causes to effects. The facts of history are of little value as information merely; the lessons to be drawn from them are of great value. When teaching topically, events are not presented as of value in themselves, but as elements which together produce certain results. The attention of the pupils is also confined to one leading topic at a time, instead of being distracted by the consideration of several unconnected matters, and they are therefore enabled more clearly to see the intimate relation of cause and effect. They will thus soon recognize it to be a study of great utility, and will cease to regard it as a mere test of memory.

The following lesson is given as an example of topical teaching. It may also be of service to teachers, as most text-books on Canadian history omit to deal with the subject:

CONSTITUTIONAL CHANGES IN CANADA DURING THE BRITISH PERIOD.

The following is a summary of the changes and advances made under the British:

1. **Military** Government, 1760 to 1764.
2. Government by **English Law**, 1764 to 1774.
3. Government under the **Quebec Act** 1774 to 1791.
4. Government under the **Constitutional Act**, 1791 to 1841.
5. Government under the **Union Act**, 1841 to 1867.
6. Government under the **British North America Act**, 1867—present.

1. Military Government, 1760—1764. During most of this period Canada was an English province only by right of conquest, so that *French* laws were administered by Gen. Murray, commander-in-chief of the British forces.

2. Government under English Law, 1764–1774. When the King of England assumed possession of Canada formally, he appointed a Governor and Council to administer *English* laws in it. The people had nothing to do with framing or amending these laws. Their duty was merely to submit to them. The enforcement of English laws on a French population naturally caused much irritation. Some remedy had to be provided, and after securing careful reports, the British Parliament generously passed the *Quebec Act*.

3. Government under the Quebec Act, 1774–1791. This substituted *French* for English law in all but criminal cases, and removed the prohibitions against the holding of State offices by Roman Catholics. It gave great satisfaction to the French, and equal dissatisfaction to most of the English in Canada. The number of the latter was soon augmented by the coming of the *United Empire Loyalists*. The agitations of the British settlers for a change led to the passage of the *Constitutional Act*.

4. Government under the Constitutional Act, 1791–1841. This Act divided Quebec into *Upper* and *Lower* Canada, for the *English* and *French* respectively, and recognized to a certain extent the right of **self-government** Each province had a Lieutenant-Governor, a Legislative Council, and an Assembly. The Governor appointed the Council, the people elected the Assembly. No Act of Canadian Parliaments became law until it received the approval of the King of England. Of course the Lieutenant-Governor and the *appointed* Council were the disallowing parties in reality. They had it in their power to neutralize the decisions of the representatives of the people. This gave rise to serious abuses, and a large section of the people in both provinces strongly opposed the exercise of controlling power by *irresponsible advisers* of the Crown. The struggle for **Responsible Government** led to rebellion in both Upper and Lower Canada, and brought about the **union** of the provinces. The British Government sent out **Lord Durham** as Governor-General and Lord High Commissioner, in 1838, to enquire into the condition of affairs in Canada. He did not remain long in the country, but his report to the Imperial Parliament recommended the confederation of the provinces, and the introduction of the principle of Responsible Government. This report led to the **union** of Upper and Lower Canada in 1841.

5. Government under the Union Act. This lasted 26 years, from 1841 to 1867. The Union Act granted the advantages of **Responsible Government.** The advisers of the Crown must now have the support of the majority of the representatives of the people. Race jealousies, however, and other local causes, ultimately rendered the harmonious working of the two provinces impossible, so the wider scheme of **Confederation** was brought about.

6. Government under the British North America Act. This came into force on **Dominion Day**, July 1, 1867, and continues in force till the present time. It gave a Governor-General and Parliament for the Dominion, and a Lieutenant-Governor and Local Legislature for each province. The Dominion Parliament consists of two Houses—the *Senate* and the *House of Commons*. The members of the former are appointed by the Governor-General, on the recommendation of the *Ministry*; those of the latter are elected. The Ministry is responsible to the House of Commons, and must have the support of a majority of its members.

ORAL LESSONS IN LANGUAGE.

FIRST YEAR IN SCHOOL.

For language lessons for the first year in school, the objects with which children are already partially familiar furnish abundant material. A few conversational lessons, similar to that outlined above, to enable the teacher to study the children while the children learn how to go to school, may be followed by familiar talks about the objects in the school-room. As the chief use of these early lessons is to get the children to express what they know, the objects chosen should be such as they have seen elsewhere; as the table, the chair, the door, the windows, or the clock, rather than the blackboard, the crayons, or the desks. To name the object, to speak the name plainly, to tell where they have seen something like it before, to tell what it is for, to tell the color of it, and anything else they can about it, may be quite enough for one lesson. In general, without limiting freedom of expression, it is better to have a plan for the lesson: as,—

1. The name of the object. Drill on the pronunciation of the name.
2. How many have seen any other or others like this. Where? A question which will elicit in answer the name (if not too difficult) of more than one.
3. What people have them for, or do with them, or of what use they are.
4. Color; very large or small; like or unlike others which they have seen; why others did not look like this.
5. Questions which elicit in answer the words of the lesson upon which they need to be drilled.
6. A simple home-task to cultivate perception and comparison; as, if the lesson has been about a chair, to look at the chair in which baby is rocked to sleep, or the chair in which the little brother or sister sits at table, and tell about it to-morrow.

Cautions. 1. Avoid objects whose names the children could not articulate.

2. Avoid teaching or using many new words.

3. Use very simple and pure English. If a child errs in speech, either restate his fact without remark, or say, "Yes, that is true." I would say, "....," putting it in better form. Or, agree with

him as to the fact, and ask him or another to "tell it in a different way," or "in a better way." Let the child who made the error repeat what he said in the better form. Cordially approve the new statement. *Not merely to see that a thing is done, but to see that it is done in the best way*, is the indispensable office of the teacher. The child is not to be interrupted or contradicted. Without any spirit of censure, with tact, politeness, and gentleness, he is simply to be shown the right way.

4. The lessons should be brief. Twenty minutes would be too long, even for a class of forty children.

5. Choose unlike objects for consecutive lessons. Vary the plan pursued.

Two or three talks about objects with which the children are comparatively familiar may be followed by a few picture lessons on domestic animals, or two or three lessons in distinguishing sounds, recognizing colors, and testing weights. The following scheme of lessons will be suggestive to the teacher, and may be modified in any way which will adapt it to the needs of individual classes, provided it be remembered always that,—

To educate the senses and cultivate perception is as great a service as to train the lips to speak. That—

To help the child acquire ideas is more valuable than to teach him to use words. That—

Pictures appeal to but one sense, and cultivate imagination rather than perception, give erroneous ideas of relative size, and give no ideas of sound, weight, and other sensible qualities; and that picture lessons must therefore alternate constantly with lessons on *Sound*, *Color*, *Size*, *Weight*, *Form*, *Drawing*, *Minerals*, *Plants*, and manufactured objects.

To keep in view that in all these things *the child is a discoverer*; that *the eye, the ear, the hand, and the tongue are to be impartially trained*; it would be better not to think or to speak of these early lessons as *Language Lessons*, but as exercises in getting acquainted with things.

Color. Make a collection of bright-colored crewels, knots of silk, samples of ribbon, straws, bits of tissue-paper, beads, feathers, and whatever will add interest, or variety of application, to the lessons. During the first year, teach the children to recognize and name the prominent colors; as,—

RED,	YELLOW,	BLUE,
GREEN,	VIOLET,	ORANGE,
BROWN,	WHITE,	BLACK.

Plan. 1. Place the materials of various colors before the class. Select two objects, as two blocks, straws, or feathers, which *differ in color but are alike in every other respect.* Have the two objects named.

2. Hold up one of them, and ask who will come to the table and find one *just like* it. Another. Another. In each case have the class agree that they are alike.

3. When all have been found, still ask them to find another. If they say there are no others, select one which differs in color only, and ask why that would not do. What color are these?

4. Who can find anything else on the table that is *red?* Repeat this until all the things that are red have been found. In each case have the child show the object to the class, and tell what he has found, and what color it is; as, "*I have found a bead*," "*This feather is red.*"

5. Find something elsewhere in the room that is red; or, Bring something to school to-morrow that is red.

Cautions. 1. When the objects are not in use, it is better to keep them out of sight. *Novelty* furnishes half the interest of the lesson.

2. Each color should be represented in different material, and in various tints and shades.

3. If the children say "*light blue*," "*dark green*," etc., accept and use the terms; but do not attempt to teach them to distinguish or name the different tints, hues, and shades.

4. Take care to *place together the colors which harmonize*; as red with green; yellow with violet; and blue with orange.

5. Test every child in the class to discover if any be color-blind.

When one color has been learned, make on the blackboard a small square or other design in crayon of that color, and let it remain. After red, teach the class to recognize green. Review red and green together, and add the design in green crayon. Place elsewhere on the board the design in orange and blue, and in yellow and violet, when those colors have been learned.

After several colors have been taught, call upon the children to name a flower, a fruit, a bird, or other absent object, and tell what color it is. To be sure that all in the class are thinking of the same color, have the child who names the object point out something in the room that is of that color. If only a part of the object be of that color, as the breast or neck of the bird, or the centre of the flower, have the child state what part is of the color chosen. If the thing named varies in color—as, roses red, white, yellow—lead the class to state that. When the children differ about the color of any object, let them look at it before the next lesson, and report what color it is. The colors in a bouquet, in a picture, in the plumage of a duck or peacock, in the rainbow, or in the landscape seen from the school-room window, may be used as a lesson in review. The name of each color written over the color-square on the blackboard will be learned by the word-method before the close of the year.

Size. By the comparison of sticks, strings, lines, strips of paper, pieces of tape, and various other objects, lead the children to pronounce and use correctly:

1. *Long* and *short*,
2. *Long* and *longer*,
3. *Long*, *longer*, and *longest*,
4. *Short* and *shorter*,
5. *Short*, *shorter*, and *shortest.*

Plan. 1. To develop the new idea and teach the word, present two objects, as two strings, which differ in length and are alike in every other particular. Have the class say what you have; how many you have; how many you put on the table; *which* string you put down, and how they can tell which it was when the two are together.

2. Apply the new word, or words, to lines on the blackboard and to the objects in the school-room.

3. Have them name things seen out of school that are *short; long.* Name two that are long, and tell which is the longer, etc.

Cautions. 1. *Teach the children to measure*, and not to guess, to find out which is longer or shorter.

2. Present new objects, and vary the tests given and the applications required, in order to promote interest and to secure variety in the language used.

Take a few lessons on some other subject; as *Weight*, or *Sound.* Then review the above, and teach:—

6. *Broad* and *narrow*,
7. *Broad* and *broader*,
8. *Broad*, *broader*, and *broadest.*

Caution. If a child use a correct word, as *wide*, accredit it, and commend him. Ask who knows another word that means the same, and accept, or teach *broad.*

9. *Two words* to describe the same thing; as, "a *long*, *narrow* brook," "a *long*, *broad* street," "a *short*, *narrow* lane," "a *broad*, *short* aisle."

10. *Thick* and *thin.*
11. *Thick*, *thicker*, and *thickest.*
12. *Thin*, *thinner*, and *thinnest.*
13. *Two words* to describe the same thing; as, "a *short*, *thick* pencil," "a *long*, *thin* board," "a *broad*, *thin* ribbon."

Caution. Aid the children to express themselves in full statements; as, *The stove-pipe is long. A piece of paper was wrapped around it. I have the thickest coat.*

NOTE.—If there be time, the teacher may add lessons on things that are *large*, *small*, *deep*, *high*, *tall*, *low*. *Shallow*, *slender*, and words as difficult as these should be deferred till much later.

Weight. Furnish, in addition to the objects which the class see and handle, a few packages which look alike, but differ in weight.

Develop the correct ideas, and teach the pronunciation and use of—

1. *Light* and *heavy*,
2. *Heavy*, *heavier*, and *heaviest*,
3. *Light*, *lighter*, and *lightest*,
4. Large (in size) and light (in weight),
5. Small (in size) and heavy (in weight).

Plan. 1. Have the objects distinctly named; as, *cork*, *iron*, *a sponge*, *a book*, *a feather*, some *packages* (bundles or parcels). Let the children talk freely about them,—tell the use of cork, iron, or sponge; where the feather grew, and what color it is, etc.

2. Have a pupil stand with arms outstretched at the sides. Place a light object on the tips of the fingers of one hand, and a very heavy object on the other. Lead the class to state that the stone made the arm drop, and the sponge did not. Repeat with various objects and several children.

3. Obtain or teach *light* and *heavy*.

4. Ask the class to find things in the room that are *light*; that are *heavy*.

5. Apply to the paper parcels, and lead them to state what we must do to find out if anything be light or heavy.

6. In review, have the pupils apply two or more terms to the objects found; as, The poker is *short*, *thick*, *heavy*; the *long*, *light* pointer, etc.

Place. By proper questioning and by a suitable arrangement of objects, lead the class to pronounce and use correctly the ordinary prepositions; as,—

The box is *on* the table.
The pencils are *in* the box.
The stool is *under* the table.
The stove is *by* the window.
Mary is *near* the fire.
The bell is *between* the box and the book.
They knocked *at* the door.
We rode *down* the hill.
We walked *up* the hill.
They ran *from* the dog.

Caution. 1. Do not allow the use of "*frum*" for *from*; "*uv*" for *of*; "*eowt*" or "*deown*" for *out* or *down*.

Form. During the latter half of the year the class may be taught objectively a few words which express *form*; as,—

1. All that we can see or touch of the ball (the box, the block, etc.) is its *surface*.

Plan. 1. Have the objects named.
2. Hold up a ball, and ask what it is. How do you know?
3. Take the ball and show me all of it that you can see. Touch all of the ball that you can see.
4. Repeat with various objects and several children.
5. Who knows what to call all that we can see or touch of the ball? Children, or teacher, give term *surface*.
6. Drill on the pronunciation of the word. Application: as,
Take something from your desk and show me its *surface*. Show me all of the surface. What is the *surface* of the box? What (of this block, &c.) am I touching? What (of the bell, etc.) do you see?

2. The ball (egg, apple, etc.) has a *curved* surface.

Plan. Push a ball, and then a box. Lead the class to say that the ball rolled; that it rolled on its surface; that the egg (apple, etc.) rolls on its surface; that the box, book, etc., will not roll. Teach "*curved surface*," and apply to objects in and out of school, or which may be brought to school; as a lemon, marbles, a grape, an orange, etc.

3. The box (block, book, etc.) has a *plane* surface.

Plan. Review *curved surface*. Teach *plane surface* by a similar plan.

4. This is a *face*. These are *faces*.

5. The face on which the block will roll is a *curved face*. A face on which the box will stand is a *plane face*.

Plan. 1. Hasty review of *surface*, *curved surface*, and *plane surface*, with application to the objects to be used in the lesson.
2. Call attention to something shaped like a hemisphere (or cylinder). Show all the surface. Show that it will both roll and stand.
3. Have a child put his hand over the part of the surface on which it will stand; touch every bit of the part; say that he is touching *a part of the surface*; that the box will stand on this part of the surface. Repeat with other objects and different pupils.
4. Find a part of the surface on which this will roll; show all of that part; tell what you are touching. Repeat with objects which have plane surfaces.
5. Teach *face* and *faces*. Apply to many objects. Lead the children to use the terms *curved* and *plane*; to tell what a *curved face* is; what a *plane face* is; and that *a face is a part of the surface*.
6. Review with varied application.

6. This is an *edge*. These are *edges*.

7. This is a *straight edge*. This is a *curved edge*.

Plan. 1. Take a block or box. Call attention to an edge. Who can take another block and find something on it like this? Apply to the desks, table, etc.
2. Who knows what this is? Drill on *edge*.
3. Find another. Another. What shall we call all of these? Drill on *edges*. Find three edges that are alike.
4. By moving the fingers towards each other on two adjoining faces till they meet on the edge, lead the children to state, "Where two plane faces meet is a *straight* edge." "The edge between a plane face and a curved face is a *curved edge*."
5. Application. Find a face and tell us about it. Say something about this edge. What is a plane face? On what kind of a face will the box roll? Show me all that you can see or touch of the orange. What is it? What kind of a surface has the orange? See if it will roll on its surface. Pick out a block that has one curved face, one plane face, and one curved edge. Take something from the table and tell us all you can about it.
6. Bring something to school that has a plane surface.

8. A picture of a straight edge is a *straight line*. A picture of a curved edge is a *curved line*.

9. This straight line is *vertical*. This line is *horizontal*. This is an *oblique* line.

NOTE.—The review of the words taught should be by means of application to new objects. If the pupils were six when they entered school, they will be able to take in connection with the review.

10. This is a *sphere*. This is a (half-sphere) *hemisphere*.

11. This has two curved edges; it has two plane faces, and a curved face between them; it is a *cylinder*.

12. This has six plane faces *just alike*; it has eight corners; it has twelve straight edges; it is a *cube*.

13. This has one curved edge; it has one plane face; it has a curved face that ends in (tapers to) a point called the *apex*; this is a *cone*.

In application of the words which describe lines, the teacher may make a drawing on the blackboard, and have the class point to the various lines and tell what kind of a line each is. Or, the teacher may dictate: "Draw a vertical line. Draw a straight line. Draw a curved line. Draw a horizontal line. Draw a straight line that is neither vertical nor horizontal; what kind of a line is it?" Or, each child may be allowed to make a picture, using a limited number of lines, and describe his picture to the class.

Minerals. The list of words to be taught by these lessons must vary in various localities. In every school the children may be taught to distinguish and name,—

MARBLE,	SLATE,	COAL,
GOLD,	SILVER,	IRON,
COPPER,	LEAD,	TIN,
ZINC,	PEBBLES,	SAND,

and the minerals common in their own locality. They should be able not only to name but to say something about each; as, The pebble is *smooth* and *white*. It is *small*, and has a *curved surface*. Iron is *heavy*. This piece of marble is *cold* and *heavy*. Gold is *yellow*, but the coal is *black*. This stone is *large* and *rough*. The sand *sparkles*. The tin is *bright*.

Sound. The lessons on sounds may be given in five or ten minutes, as a relief to any slate exercise, or attention to a book or chart. Of course, the eyes must be closed, or the face averted.

Plan. 1. With all eyes closed, touch a bell and ask, What did I do? How do you know? With what did you hear? Show me your *ears*. How many ears have you? Touch one of them, and say *ear*. Drill. Touch both, and say *ears*. Drill.
2. "*All look and listen.*" Touch two bells, or a glass and a piece of wood. "*Close your eyes.*" Touch one only, and ask, "*What did I touch?*" Have the class agree. "*How could you tell?*" Children.

"*By the sound.*" Apply to an empty glass, and a glass full of water, and to many various objects.

3. Touch an object gently, then sharply. Lead the class to say that it was the same thing, but one sound was *loud* and the other *low*, or *soft*, or *faint*.

Have the class name sounds they like, and sounds they do not like; imitate sounds; tell why people keep a canary bird in a cage instead of a goose or a peacock; recognize each other's voices and footsteps; and use words that *tell sounds:* as,—

The bell *rings*.	Birds *sing*.
Boys *whistle*.	Parrots *talk*.
A bee *buzzes*.	The cat *mews*.
Geese *hiss*.	Horses *neigh*.
Peacocks *scream*.	The crows *caw*.
A robin *chirps*.	Larks *warble*.
A rooster *crows*.	A hen *cackles*.
The dove *coos*.	Lambs *bleat*.

The duck says "*Quack, quack.*"
The bob-'o-link says, "*Bob-'o-link.*"
We *whisper, laugh, talk, sing, shout, whistle.*

Animals. No attempt should be made to give these lessons the formality of scientific study. They are to be simply *talks* about familiar animals, to lead the children to observe closely, and to state what they know in good language. When it is necessary to use a picture, as for a lesson about the cow or horse, have the class see the animal out of school, and verify, or add to, the statements made. Whenever possible, have the living creature or a stuffed specimen before the class during the lesson. Any bird in a cage, or stuffed bird, a globe of gold-fish, or a specimen from the fish-market, will furnish the class with something to say. If a picture be used, choose one large enough for all in the class to see; and when the animal is named, have different children show on the wall *about how high* it is, or name some other animal *about as large.* Not all the points indicated in the general plan, given below, can be taken in one lesson. The character of the previous lessons must determine which may be omitted.

The names of parts common to all, as *head, body*, may be written upon the blackboard, and will soon be learned by the word-method.

General Plan. 1. Name of animal.
2. What it does.
3. Parts named and counted.
4. Description of parts.
5. Use of characteristic part; as, wings to the bird, fins to the fish, horns to the cow.
6. Uses of the animal to us.
7. Parts useful after death.
8. Name of parts used after death; as, *meat, hide* or *leather, mutton, pork.*
9. Treatment.
10. Name of young; as, *calf, chicken, colt, lamb, kid, gosling, kitten.*

In considering *treatment*, the teacher has an opportunity to appeal to the moral nature of the child; to call attention to the creature's mode of defence; as, The cow *hooks*, The horse *kicks*, The dog *bites*, The rabbit *runs*, The cat *scratches*, The bee *stings*, The bird *flies*; to teach two or three words which tell about the disposition; as, The lamb is *gentle*, The rabit is *timid*, The dog may be *cross*; and two or three others; as, *shelter, protect*, or *defend.* It need not be feared that the word is too long, *if the idea be clearly apprehended.* A child says *wheelbarrow* as quickly as *saw* when he has a lively interest in the object.

It will be seen that there is no lack of material for Language Lessons in the most elementary schools. And there is no excuse for neglecting English in any schools. Children like to see things, and to talk about them. Grant them this right, enter into their spirit, and the path will be clear.

TEACHERS' CERTIFICATE EXAMINATIONS.

UNIVERSITY OF CAMBRIDGE, ENGLAND, JUNE, 1880.

The following questions are so important that we think it will interest our readers to insert them in our columns:—

THE PRACTICE OF EDUCATION.

1. Describe in detail the dimensions, structure, and furniture appropriate to a well-equipped secondary school for 200 scholars.

2. What main principles have to be kept in view in framing a time-table, and in distributing the work of assistants? Given a school of 100 scholars of ages varying from 9 to 17, how many classes would you form, and how would you divide the work of a week?

3. In what subjects of instruction can you most safely rely on book-work; and in what others is oral teaching most needful and efficacious? Give reasons for your answer.

4. School studies are sometimes divided into the "formative" and the "real." Explain this classification in detail, and show generally what proportion of importance you would attribute to each class of subjects (1) in the whole course, and (2) in the work of a given day.

5. In what order would you teach the facts of geography? What position among other studies do you assign this subject in relation (1) to the mental training it may afford, and (2) to its practical usefulness?

6. Discuss the use which should be made of home and evening lessons in connection with school work. Give your reasons for preferring that they should be either (1) supplementary to the class teaching of the previous day, or (2) preparatory to that of the following day.

7. To what extent do you think it useful or desirable to teach the principles or reasons of the rules of arithmetic and of algebra to beginners? Give the reasons, if any, for requiring some problems to be solved, empirically by the use of rules, before those rules are thoroughly understood.

8. Explain fully the method of registration both for attendance and progress which would you think it best to adopt. Say also in what form records of this kind should be communicated to parents.

9. Give some rules for the skilful and effective use of oral questioning. Explain also in what circumstances, and for what reasons, written questions and answers are of special value.

10. When is it expedient, and when is it inexpedient, to set the exact words of a book to be learned by heart? Give your reasons.

11. What is meant by the "crude-form" system of teaching Latin? Discuss its advantages and disadvantages.

12. Describe in detail the structure and contents of either a physical or a chemical laboratory for a higher school. Say also to what extent you think it wise or practicable to enlist the services of the scholars themselves, in preparing apparatus or furnishing illustrations.

HISTORY OF EDUCATION FROM THE REVIVAL OF LEARNING.

(Special subjects: Locke and Arnold.)

1. What are the chief recommendations Luther gives the town councillors of Germany in his celebrated "Letter" of 1524?

2. "*Savoir par cœur n'est pas savoir*" (knowing by heart is not knowing.) From the principles laid down in the rest of the essay, show what Montaigne meant by these words.

3. To what distinctive features would you attribute the success of the Jesuit schools for boys in the sixteenth and seventeenth centuries?

4. Take any one *English* writer on education before 1642, and mention the chief reforms recommended by him.

5. What was the *Orbis Pictus* of Commenius? What objects did he seek to secure by means of it?

6. Locke is said to hold "utilitarian" views of education. What is meant by this? How far is it true?

7. What is Locke's advice about studying "the natures and aptitudes of children"? Compare his advice with that of some writer before his time, and of some writer since his time.

8. Contrast a boy of twelve years old, according to Rousseau's ideal and according to the ideal of the schoolmasters of his time.

9. What did Pestalozzi do at Stanz? What were the main lessons he learned from his experience there?

10. State some of Jacotot's aphorisms.

11. What are the special advantages Froebel sought to gain for children by means of the kindergarten?

1. Mention some points of agreement, and also of disagreement, which you see when you compare Locke's theory of education with Arnold's.

13. What were Arnold's views on corporal punishment? What was his practice?

14. On what ground did Arnold advocate natural-science teaching into the school-course?

15. In speaking of the education of his own daughter, what does Arnold say about the intellectual education of girls?

THE THEORY OF EDUCATION.

1. What different views of mind are implied in the words "education" and "instruction" respectively? In what sense may we speak of the mind as having faculties?

2. Perception has been called "*Presentative-Representative* Cognition." Explain this by analysing your perception of the table at which you are writing. (In the analysis, bring out carefully the whole part played by muscular activity.)

3. What do you understand by "object-lessons"? What is their psychological reason, and under what conditions may they be made effective?

4. State the laws of contiguity and similarity. Show how association by similarity is implied in the recall of any train of images by contiguous association.

5. Analyse the aptitudes for language and for natural science respectively?

6. How would you set about proving to a class of children that they will all be dead a hundred years hence? Bring out in your answer the precise difference between inductive and deductive reasoning.

7. What do you understand by instinct, and what is its range in man? Explain how it comes to pass that we can say to any act, "I did it mechanically."

8. How is mental acquisition promoted by teaching a number of children together?

9. What is to be said for or against the "Discipline of consequences" as applied to the young?

ADVANCED QUESTIONS.

(*Not more than one question to be answered out of each group.*)

I.

1. "Education should always be according to nature." Which reformers have especially insisted on this? Explain in each case what you understand to be meant by "nature."

2. When Arnold was a candidate for Rugby, one of his testimonials said that "if appointed he would change the face of education all through the public schools of England." What changes that have since taken place should you connect with Arnold's influence?

II.

1. Distinguish the notions of development and growth; and upon what grounds and with what effect they are applicable to the mind.

2. What reason is there, if any, for distinguishing various kinds of memory? Suppose a man has "no memory for places," might he cultivate one, and how?

III.

1. What is meant by "synthesis" and "analysis," in their relation to modes of teaching? Illustrate your answer, and say in what cases, if any, the logical order in which truths and facts are related is not the order in which they can be most effectively taught.

2. Write an essay on Rewards and Punishments, and the principles on which they should be administered.

ENTRANCE EXAMINATIONS.

FOURTH BOOK AND SPELLING.

TIME—ONE HOUR AND A HALF.

Examiner—J. M. BUCHAN, M.A.

Values.

13 1. Tell what you know about the battle of Thermopylæ.

2. "Impoverished by these disasters, it was not till the patent had nearly expired that Sir Humphrey procured the means to equip another expedition. With the assistance of Raleigh, now in high favour with the Queen, he collected a fleet of five ships. 'We were in all,' says the chronicler of the voyage, 'two hundred and sixty men, among whom we had of every faculty good choice; as shipwrights, masons, carpenters, smiths, and such like requisite to such an action, also mineral men, and refiners. Besides, for solace of our own people, and allurement of the savages, we were provided with music in good variety; not omitting the best toys for morris-dancers, hobby-horses, and many like conceits.'"

—*Fourth Reader, pp. 34 and 35.*

2+2+ (i.) Give Sir Humphrey's surname; quote the celebrated
6 saying he uttered before he was lost, and tell what you know about the expedition.

2 (ii.) Name the queen referred to.

3 (iii.) Tell what you know about Raleigh.

11 (iv.) Explain the meaning of 'impoverished,' 'disaster,' 'patent,' 'chronicler,' 'voyage,' 'mason,' 'mineral,' 'refiner,' 'solace,' 'allurement,' 'savage.'

3. "Speed on the ship! but let her bear
No merchandise of sin,
No groaning cargo of despair
Her roomy hold within,
No Lethean drug for Eastern lands,
Nor poison-draught for ours;
But honest fruits of toiling hands,
And nature's sun and showers!

—*Fourth Reader, p. 69.*

7 (i.) Explain the meaning of 'merchandise,' 'cargo,' 'despair,' 'hold,' 'Lethean,' 'drug,' 'draught.'

6 (ii.) To what kind of business does the poet refer in lines 3 and 4? In line 5? and in line 6?

2 (iii.) Parse 'sun,' line 8.

2+2 (iv.) What is meant by 'fruits' in line 7? Why are they called 'honest'?

10 4. Distinguish 'pane' from 'pain,'
'rain' " 'rein' and 'reign,'
'main' " 'mane,'
'fane' " 'feign,'
'lain' " 'lane.'

1+1+ 5. Name the vowels. What is a diphthong? Point out
3 the diphthongs in lines 3, 5 and 6 of the stanza quoted in question 3.

The lessons in the 4th Book selected for special critical study are:

(1) The Norwegian Colonies in Greenland.—*Scoresby.*
(2) The Founding of the North American Colonies.—*Pedley.*
(3) The Voyage of the "Golden Hind."—*British Enterprise.*
(4) The Discovery of America.—*Robertson.*
(5) The Death of Montcalm.—*Hawkins.*
(6) Jacques Cartier at Hochelaga.—*Hawkins.*
(7) Cortez in Mexico.—*Cassell's Paper.*
(8) The Buccaneers.—*The Sea.*
(9) The Earthquake of Caraccas.—*Humboldt.*
(10) The Conquest of Peru.—*Annals of Romantic Adventure.*
(11) The Conquest of Wales.—*White's Landmarks.*
(12) Hermann, the Deliverer of Germany.—*Jerrer.*
(13) The Battle of Thermopylæ.—*Raleigh.*
(14) The Destruction of Pompeii.—*Magazine of Art.*
(15) The Taking of Gibraltar.—*Overland Route.*

ENGLISH HISTORY.

TIME—ONE HOUR AND A HALF.

Examiner—S. ARTHUR MARLING, M.A.

Values.

2½×6 =15 1. Explain what is meant by the following terms:—Feudalism, Crusade, the Invincible Armada, Cabinet Minister, the Pretender, the Premier.

12 2. Name, in order, the sovereigns of Great Britain from James I. to Victoria, showing how each was related to his or her predecessor.

3×3 3. What were the wars of the Roses? When were

=9 they waged? Why are they important events in English history?

3×3 =9 4. In whose reign did those eminent persons live, and for what is each of them distinguished: Thomas à Becket, Sir Walter Raleigh, William Pitt?

5×3 =15 5. What was the cause of the Great Civil War in England? Who were the principal persons engaged in it? What were its results?

12 6. What are the principal differences between the British Parliament and that of the Dominion?

DICTATION.

TIME—TWENTY MINUTES.

Examiner—J. C. GLASHAN.

Value—22. Fourth Reader, page 217, from 13th to 28th line. *Two marks to be deducted for every misspelled word.*

Notes and News.

ONTARIO.

W. J. Summerby, formerly Head Master of Kingston Model School, has been appointed Inspector of the Counties of Prescott and Russell.

Record of Farmersville High School, as changed by appeals—1 A, 10 B, 5 Intermediate, total 16, none of whom had ever passed Intermediate before. In addition to these, 28 others passed Third Class Examination. In the last four years this school has sent out 91 Third Class teachers, in addition to Second Class and Intermediate.

Oakville High School is steadily advancing under the able management of Mr. Wellwood, the head master. Six candidates were successful in passing the last Intermediate examination, two at the preceding.

At the South Hastings Model School, successful work has been done under Mr. Irwin, twenty-six pupils having passed at the late examination at Belleville.

The Model School for the County of Wellington held its first session for the current year with commendable success, at Mount Forest. All the candidates, twenty-four in number, obtained their certificates. At the close of the examination, the teachers presented the principal, Mr. Westervelt, and Dr. Yeomans, each with a piece of plate as an expression of esteem.

Mr. J. M. H. Harrison, elocutionist, Woodstock, writes to say that he leaves next Saturday "for a trip to the Holy Land, but will be back in time to make arrangements with the spring Teachers' Associations."

Cortez Fessenden, Esq., M.A., Principal of Brampton High School, has accepted a similar appointment at Napanee, at a salary of $1200, Brampton only giving $1000. The Brampton High School has attained a high record of success under Mr. Fessenden, and the trustees of so large a town and so flourishing a county ought not to be behind smaller towns in the payment of their teachers.

Smithville High School has organized a literary and debating society, to be known as the Clionian Society. President and Critic, A. C. Crossley, B.A.; Vice-President, S. A. Morgan; Secretary-Treasurer, Thos. Scales, B.A.; Assistant Secretary-Treasurer, Miss Minnie Collier.

Mr. Michele, late head master of the Perth High School, has been appointed by the County Council inspector of schools—a good appointment, as Mr. Michele's practical fitness for the office has been so well tested in his own locality.

The Listowel High School Board have resolved to petition the Minister of Education in favor of abolishing the distinction between High Schools and Collegiate Institutes.

The township of Euphemia has this year expended an aggregate sum of about $5,000 in new school-houses.

A Hastings journal publishes a list of pupils on the roll of the Stirling Public School whose attendance has fallen under the four months required by law.

The Brockville High School Board have resolved to cut down their staff to a head-master, at a salary of $1,200, and an assistant, at a salary of $1,000.

D. A. McMichael, B.A. (Tor.), has been appointed head master of the Strathroy High School, with Messrs. H. D. Johnston and D. L. Leitch as his assistants, the salaries being $1,000, $800 and $650 respectively.

At a recent meeting of the Ottawa School Board, one of the trustees called attention to the falling off in the attendance of pupils, and spoke in favor of a corresponding reduction in the teaching staff of the city.

A correspondent of the Seaforth *Expositor* complains of the practice, still too extensively indulged in by inspectors, of granting permits. When holders of regular certificates are so numerous it should not be necessary to grant a single permit.

The Secretary of the Listowel Public School Board has been instructed to notify parents who neglect to send their children to school that proceedings will be taken against them for such neglect unless they at once comply with the law.

PRESENTATION.—A magnificent gold-headed cane was presented on a late occasion to Mr. J. Hyttenrauch by his music pupils of the East Middlesex Model School, London, Ont.

Mr. R. Pickard, the winner this year of the Gilchrist scholarship, is an *alumnus* of the University of New Brunswick. Mr. Pickard had his right arm disabled while preparing for the examination. He was compelled to write for the scholarship by an amanuensis. A full statement of the case was transmitted to the Senate of the London University, and no exception was taken to this mode of examination.

The Public Schools in Guelph opened on the 1st of September. Upwards of 1200 names are on the registers, and of these there is an actual attendance of about 1,000. Twenty-four teachers have been employed for some time, but by a re-arrangement of the boys, classes, one has been dispensed with, so that there are now twenty-three. The schools are all graded, there being two teachers of First Book, two of Second, seven of First and Second, in the Ward Schools, six of Third and six of Fourth, three males and three females. Sixteen of these are engaged in the Central School Building, and the others in the Ward Schools. These last have been repaired, whitewashed, repainted, and furnished with new furniture during the holidays. Guelph can now point with some degree of satisfaction to its Public Schools, and will compare favorably with any town or city in Ontario. All the schools are supplied with water from the water works.

The average attendance of pupils at the Goderich High School, of which Mr. H. J. Strang, M.A., is head master, has been 125 during the half-year ending last July.

On visiting the public school at Clifton, we were greatly taken with the neatly drawn maps in colored crayons on the blackboard in the 3rd class apartment. In the 4th class room, various designs consisting of ornamental writing, graceful outlines of birds and flowers, Egyptian figures, &c., were most tastefully drawn. The idea is a good one, as it tends to cultivate neatness, elegance, and grace, besides adding considerably to the pupils' improvement in penmanship and geography. We were informed by Mr. Dobbie, principal, that at last entrance examination for high schools, 30 pupils from this school passed.

A literary society has been formed in the High School, Goderich, and the subscriptions are expended in purchasing a library containing many valuable books of reference in science, literature, and art. The library is at present well stocked, and additional volumes are added as funds permit.

In Oakville High School, six candidates passed at the last Intermediate examination, namely, one A, three B's, and two in Intermediate standing.

NOVA SCOTIA.

Prof. Schurman, M. A., Ph. D. has entered upon his duties as Professor of Logic and Political Economy at Acadia College. In 1875, Mr. Schurman won the Gilchrist Scholarship for the Dominion. He graduated B. A. at the University of London in 1877. He has subsequently secured the degree of Doctor of Science from the University of Edinburgh, and spent two years in attendance at the German Universities of Heidelburg, Gottingen and Leipsic. The Professor is justly deemed an important addition to the already distinguished faculty of Acadia.

The next school year bids fair to be one of great activity, as regards the erection and improvement of school buildings. The ratepayers of the town of Sydney, C.B., have "voted supplies" for erecting a new County Academy on a scale worthy of that imporant Centre of population and influences. The Section of Cow Bay, C. B., is building a School House said to be the finest Public

School edifice on the Island, though it will of course be surpassed by the projected Academy at Sydney. Sydney Mines, the most populous section in Cape Breton, has also taken steps to erect a commodious School House. Heretofore there has been overcrowding. Digby has voted a handsome sum to repair the County Academy. Parrsboro, by vote of the annual meeting, has determined to wipe out the disgrace of insufficient school accommodation. We trust that the proportions of the new edifice will be determined by an intelligent faith in the future of this flourishing village. In addition to the foregoing, which are new enterprises, we might refer to the handsome building just erected by the Linen Town Section, Yarmouth, which will be opened at the beginning of the ensuing term, and to the noble Pictou Academy rapidly approaching completion.

W. E. Butler, Esq., B.A., has been appointed Professor of Mathematics and Civil Engineering in King's College. The vacancy occurred through the resignation of Prof. Oram. Professor Butler leaves a good Educational position in England.

F. C. Sumichrast, Esq., Registrar of the University of Halifax, has opened a select school, called the Fort Massey Academy. Messrs. Creighton and McKenzie are associated with him as masters.

Miss C. Emma Lewis, winner of the Governor General's Gold Medal at the Provincial Normal School, and heading the list of first class candidates at the recent annual examination for teachers' licenses, has been appointed to an important position in the Protestant Academy, St. John's, Newfoundland.

At the recent examination for license to teach in the Public School, licenses were obtained, as we learn from the October number of the Provincial *Journal of Education*, as follows:—Academic License (Grade A.) 1; First Class (Grade B.) 41; Second Class (Grade C.) 92; Third Class (Grade D.) 171.

Mr. Chisholm, second master of the Dartmouth High School, has resigned to enter upon the study of medicine, and Mr. L. D. Robinson, of Aylesford, has been appointed in his place. Mr. Mooney, of St. Patrick's School, has tendered his resignation, to take effect shortly. St. Patrick's has the largest registered attendance of schools of Nova Scotia. N. Smith, Esq., has exchanged the principalship of the County Academy at Amherst for that of the Queen's County Academy at Liverpool.

QUEBEC.

At the recent McGill College Competitive Examinations, the following scholarships and exhibitions were awarded to students and candidates for entrance:—*Scholarships* tenable for two years. Third year,—Classical and Modern Languages. Scholarships: Hague, H. I.; Gregor, L. R.; each $125 yearly, the gift of W. C. McDonald, Esq. Third year,—Natural Science. Scholarship: Lafleur, H. A.; $125 yearly, the gift of W. C. McDonald Esq., *Exhibitions* tenable for one year. Third year,—Natural Science Exhibition: Jones, J. E.; $100, the gift of Principal Dawson. Second year,—Lee, A.; (private tuition) $125, the gift of W. C. McDonald, Esq., Bland, C. E. (High School, Montreal) $100, founder, Mrs. Redpath. First year,—MacKay, A. A. (Pictou Academy, N. S.,) $125, the gift of W. C. McDonald, Esq.; Unsworth, J. K., (Brampton High School, Ont., and private tuition) $125, the gift of W. C. McDonald, Esq.; Blackader, E. H., (High School, Montreal) $100, the gift of the Governors.

A meeting of the Protestant Committee of the Council of Public Instruction was held in the Education Office, Quebec, on the 6th October, at which there were present the Lord Bishop of Quebec, Chairman, Dr. Dawson; the Hon. L. R. Church, R. W. Heneker, Esq., the Lord Bishop of Montreal, Dr. Cook, Dr. Cameron, M. P. P., the Hon. W. W. Lynch and the Hon. G. Ouimet, Superintendent of Public Instruction.

The committee agreed to accept the resignation of John McCormick, Esq., as a member of the Board of Examiners, Carleton, County Bonaventure, and to recommend that the Rev. Peter Lindsay, New Richmond, be appointed in his stead.

Letters were read from Mr. D. McGuigan, Secretary-Treasurer, Protestant School, Metis, and from Mr. Ferguson, of the same place, in regard to the collection and appropriation of school assessments as between Roman Catholics and Protestants in the case of the Messrs. Price's Mills in Metis. The letters were handed to the Hon. the Superintendent of Public Instruction with the request that he would inquire into the matters complained of, and report to next meeting of the committee.

Applications from Grenville Academy, Eaton Academy, St. Sylvestre Model School, and Shigawake Model School, for grants from the Superior Education Fund, as well as a document laid before the meeting by the principal of Stanstead Ladies' College, setting forth the claims of the college to an increase of grant from the Superior Education Fund. The committee agreed to consider in connection with appropriation of grants about to be made from the Superior Education Fund.

A letter was read from Dr. Webber, President, Board of Examiners, Richmond, representing that the Protestant section of said Board of Examiners has been reduced by resignation, and removal of one or two members, and recommending that the Rev. James Boydell, M. A., Kingsey, John Ewing, Esq., Richmond, Sam'l. H. Chagnon, Esq., M. A., Melbourne, be appointed members of said Board. The committee agreed to recommend to the Lieutenant Governor in Council the appointment of the above named gentlemen as members of the Board of Examiners, Richmond.

On the suggestion of G. A. Purvis, Esq., President, Board of Examiners, Pontiac, the committee agreed to recommend to the Lieutenant Governor in Council the appointment of the Rev. Antoine Brunet, and the Rev. Thomas Motherwell, both of Portage du Fort, as members of the said Board of Examiners, Pontiac. It was moved by the Hon. L. R. Church and unanimously resolved:—"That in the opinion of this committee, the reduction or stoppage ordered to be made out of the Common School Fund and Superior Education Fund by 42 and 43 Vic., Cap. 22, sec. 12, does not apply to any payments to be made of moneys voted by the Legislature, or authorized by statute prior to the coming into force of the above recited act, and that a copy of this resolution be transmitted to the Superintendent of Education, with the request that he will lay the same before the Catholic Committee of the Council of Public Instruction, with the view of inviting joint action and representation to the Government respecting the same if it shall be found necessary so to do."

It was moved by Dr. Dawson and resolved:—"That the Chairman and Dr. Cook be a Sub-Committee to prepare a By-Law on Re-examination of Teachers under the Education Act, and report at November meeting."

The reports of Messrs. Allnutt & Weir, Inspectors of Academies and Model School, together with the tabulated Returns of Examinations were laid before the meeting, and considered in connection with the appropriations to said institutions from the Superior Education Fund. The committee divided among the Universities, Colleges, Academies and Model Schools $15,475.

MEMORANDUM

submitted as a report of progress of the committee on the proposed Education Bill:

"That, inasmuch as it is feared the effect of the proposed bill, according to the opinion of this committee, will be to destroy the principle of the Common School system established by law, and that in the opinion of this committee such common school system should be maintained intact,—nevertheless in the present divided state of education in this Province, and in view of the great disadvantages under which a ministry scattered throughout the Province must labour, and more especially in view of the recognition under the proposed new education law of a more complete separation of the Roman Catholic and Protestant Schools, the following provisions seem absolutely necessary:—

1st. All persons not Roman Catholics shall for the purposes of the Education Act be regarded as Protestants.

2nd. For the special administration of Protestant Schools, there shall be a Superintending Officer appointed by the Government on recommendation of the Protestant Committee of the Council of Public Instruction, who shall, under regulations of said Committee, approved by the Governor in Council, have supervision of Government Schools, and shall be Secretary of the Committee, the Inspector of Academies and Chief Inspector of Protestant Schools.

3rd. The sum granted by the Legislature for the Inspection of Schools shall be divided, and that portion appropriated to Protestant Schools shall be expended under the regulations of the Protestant Committee, approved as above.

4th. The aid granted to poor municipalities shall also be divided, and the portion allotted to Protestant Schools shall be administered by the committee.

5th. The school-tax of scattered families of Protestants, unable to sustain dissenting schools, shall be collected and paid over to the committee, to be expended in aid of schools for such families.

6th. Joint-stock companies or corporations, whether incorporated

in Canada, or acting under an English charter, and represented by an Officer in Canada, may by vote at a legally convened meeting of their shareholders annually decide, having regard as far as possible to the religious faith of the several shareholders, as to the disposal of their school taxes, whether to Catholic or Protestant Schools, or in part to each; and failing such vote they shall be divided according to population.

7th. For the examination of Protestant Teachers, there shall be a central examining Board, appointed by the Government, on recommendation of the committee, of which the Protestant Superintendent shall be chairman, which shall issue examination papers, and examine and decide on the answers returned from the Local Boards.

8th. The grades of Protestant Educational Institutions recognized by law shall be as follows:—

A.—Superior Education.

1st. Chartered Universities, and incorporated colleges affiliated to them.

2nd. The McGill Normal School.

3rd. Academies or High Schools, providing instruction in classics, mathematics, the English branches, adequate to the standard of matriculation in the Universities or for the Diploma of Associate in Arts.

B.—Elementary Education.

1st. Model Schools or first-class elementary Schools having teachers holding Model School Diplomas, and teaching in addition to subjects of elementary schools, Geometry, Algebra, or other branches prescribed by regulation of the Committee as equivalent, and receiving at least $———from the municipality, such schools shall be entitled to receive from the Common School Fund special aid amounting to——per cent. in addition to their allowance as common schools.

2nd. Elementary schools having teachers holding the Elementary Diploma, and teaching the ordinary English branches, with Arithmetic, Geography, and Grammar.

The localities in which Academies or High Schools shall be established shall be determined by the Committee, which may establish one such Academy in each county, or for a district of two or more counties, or a second in any county where there may be a sufficient Protestant population.

It was moved by Dr. Dawson, seconded by Mr. Heneker and resolved, "That these suggestions be placed in the hands of the Superintendent of Education, with the request that the same be communicated to the Catholic Committee and to the Government, and that the sub-committee on the Education Bill be continued, to report further in November."

The committee unanimously resolved, "That in the case of those schools which have sent in no returns, the grants be withheld until after the November, meeting to enable the committee to form a judgment as to whether the explanations asked for are satisfactory."

It was moved by Dr. Church, seconded by Mr. Heneker, and unanimously resolved, "That, whereas it was found by experience in 1876, that the sum of $25,500 appropriated by the Legislature for the purpose of the Inspector of Schools was inadequate, and whereas in the year 1877 the Legislature augmented the grant theretofore allowed by the sum of $4,000, and whereas the Roman Catholic Committee took occasion in consequence thereof to increase the number of salaried Inspectors, and whereas the Protestant Committee instead of increasing the number of the school Inspectors determined upon applying the portion of such increased grant as came to it for disposal, to the more efficient inspection of Academies and Model Schools, and whereas the reduction in the grant by the Legislature from $30,000 to $28,625 practically falls most severely upon the Protestant Committee inasmuch as the increase in salaried Inspectors which was made in 1878 was so made amongst the Roman Catholic Inspectors, (and hence the Legislative appropriation must be first applied to the payment of their salaries before any part can be distributed to the Protestant Committee,) and whereas at the end of the fiscal year 1878-79 there remained an unexpended balance of $1,375, or thereabouts, and whereas by the provisions of sec. 19 of 39 Vic., Cap. 15, it was enacted that all sums of money which shall have been granted by the Legislature either to Roman Catholics or Protestants for Educational purposes, and all unexpended balances of such sums shall remain to the credit and disposal of the Committee which had the control thereof, and whereas the reduction in the grant for inspection this year leaves this Committee without means to provide for the inspection of Academies and Model Schools, and it has become necessary to use the aforesaid balance or portion thereof as by right belongs to this Committee, the Superintendent be requested to confer with the Treasurer of the Province, and to ask that such portion of the said balance as of right (division being made thereof on the basis of population as heretofore) belongs to this Committee, be applied towards meeting the expense of the inspections made by Messrs. Weir and Allnutt."

There being no further business, the meeting was adjourned to Wednesday, the 24th November next.

The Provincial Teachers' Association is at present in session in Montreal. An account of the proceedings will appear in the next issue of the Journal.

Official Department.

CIRCULAR TO PUBLIC SCHOOL INSPECTORS, PUBLIC SCHOOL BOARDS, AND TRUSTEES AND MUNICIPAL CORPORATIONS.

I beg to submit for your information the following, respecting School Accommodation:

The checks introduced by the School Act of 1879, upon the demands of Public School Boards and Trustees for expenditure of money for school accommodation, were imposed with the object of giving the ratepayers an opportunity of being consulted, and thus making School Boards and Trustees more strictly responsible to their constituents than they had been heretofore.

Under the law, as it existed, Public as well as High School Boards and Trustees could demand from the Municipal Council any sum they thought fit, and, on refusal, compel the levying of the amount by legal proeess, to which no answer or remonstrance was effectual.

In the exercise of this power it was generally found that neither ratepayers nor Municipal Councils were consulted by the School Boards and Trustees, although in most instances the true interests of all would have been promoted by conference and consultation before large expenditures were entered upon, and much irritation would have thus been prevented.

The provisions of the Act of 1879 have not altered the duty incumbent upon Public School Boards and Trustees to furnish adequate accommodation in their schools, as required by sub-section 18 of section 104 and sub-section 8 of section 102 of the Public Schools Act. I have had occasion to point out to the Public School Board of the City of Toronto that this obligation of appointing adequate school accommodation is incumbent upon all Municipalities, and in case of refusal can be enforced by legal means, while this department has also the power, in case of any default in this respect, of withholding the share of the Legislative Grant otherwise payable to the School Board or Trustees concerned.

The Public Sehool Boards and Trustees, and the Municipal Councils, owe a common duty to the ratepayers in providing adequate school accommodation, with due regard to the resources of the ratepayers; and when the subject is approached in a friendly spirit there shall be no difficulty in all agreeing to supply satisfactory school accommodation.

Education Department (Ontario),
Toronto, 15th October, 1880.

Adam Crooks,
Minister of Education.

THIRD CLASS CERTIFICATES.

CIRCULAR TO COUNTY BOARDS OF EXAMINERS, PUBLIC SCHOOL INSPECTORS AND CORPORATIONS.

The following circular has just emanated from the Education Department:—

1. Third-class certificates are granted by County Boards of Examiners, under the authority of sub-section 3 of section 201 of the Public Schools Act, to candidates who become entitled after compliance with the regulations of the Education Department, such certificate continue in force for three years.

2. The conditions now required to be fulfilled, under the regulations, by each candidate are:—

1. Proof of age—if a male, of being at least 18 years; and if a female, 17 years.

2. Having passed the intermediate examination in a High School, obtaining thereat 20 per cent. on each subject and 40 per cent. on the group.

3. Having subsequently attended for one session a County Model School, and having received the certificate of the Head Master thereof that he has paid satisfactory attention to his duties therein, and that he is fit to present himself to the County Board for his professional examination.

4. Having successfully passed such examination; and

5. Having produced evidence of good character.

3. Inspectors, trustees, and others concerned, will understand from the foregoing that a certificate of having passed the Intermediate Examination, and having obtained the number of marks required as equivalent for the Third-class Non-Professional Examination, (or for the second-class) does not confer upon the holder thereof any *legal status* as a third class teacher, or any right whatever to be considered as legally qualified to teach in any public school. County Boards can only lawfully grant third-class certificates after the candidate has attended a county model school and successfully passed his professional examination.

4. The amended regulations of the 19th of August, 1880, for the examination of candidates for Public School teachers, and for the Intermediate examinations at the High Schools, clearly set forth the time, place, notices, testimonials, identification, and other particulars connected with the examinations of candidates for third-class certificates, as well as for second-class.

5. The regulations are also express in prohibiting any person being appointed or taking part as an examiner or substitute when any candidate has been instructed by him, or in any school with which he is connected. Inspectors and other presiding examiners are requested to see that this regulation is strictly observed, and in case of non-observance, the whole examination is liable to be made void.

6. Renewals of third-class certificates may be granted by County Boards of Examiners, subject to the regulations of the Education Department These provide that no candidate shall be permitted to enter the second time for an examination for a third-class certificate, except by special permission of the Minister, on the recommendation of the County Inspector, which should state the several grounds on which he bases this, and amongst others the age of the applicant, his fitness and usefulness; reasons for desiring this permission; probability of continuing in the profession, and of obtaining a second-class certificate; also as to whether there is any scarcity of teachers in his district. The County Board may also require any candidate to attend at the County Model School before granting such renewal certificate.

7. In the case of holders of third-class certificates, having passed the Intermediate Examination, who apply for renewal of such certificates, any further non-professional examination shall not be required, and County Boards of Examiners are empowered to exempt the holders of third-class certificates passing the Intermediate examination from attendance at the County Model School, in all cases where the County Board considers the teaching experience of the candidate for such renewal is equivalent to that of attendance for one term at a County Model School.

8. Inspectors and County Boards will understand that attendance at a County Model School cannot be dispensed with in any case as one of the conditions for an original third-class certificate, but only in cases of renewals of such certificates.

9. Temporary certificates can only be granted by Inspectors after the permission of the Minister has been obtained, and upon special grounds. Owing to the full supply of regular certificates now found in nearly every Inspector's district the cases which would justify an Inspector in making such an application to the Minister will now be few, and can only be sanctioned when the particular case strictly comes within the requirements of the regulations.

Education Department (Ontario),
Toronto, Oct. 26, 1880.

ADAM CROOKS,
Minister of Education

Readings and Recitations.

THE OLD BIRCHEN SWITCH THAT HUNG ON THE WALL.

How dear to my heart are the school-days of childhood,
When no care nor contrition my wild spirits knew,—
The games that I played, our larks in the wildwood,
The school-house and grove where the birch-switches grew;
The rows of mud-pies with toe-marks imprinted,
How they rush to my sight at fond memory's call;
The old cider-mill with draughts never stinted,
And the old switch that hung high on the old school-house wall,
How the youngsters assembled in terror oft trembled,
As that woe-dealing switch came down from the wall.

That knotty old switch in my mind is abiding,
For oft, when returned with some wild truant band,
I received, with that switch, a most merciless hiding,
The toughest and sorest boy-nature could stand.
Unlike the old bucket no moss was adhering,
No white-pebbled bottom was touched when it fell,
No pure sense of coolness ere marked its appearing,
But I marked each descent with a jump and a yell:
Oh the anguish that filled me, the terror that thrilled me,
When that switch was applied, no language can tell.

I remember with trembling one grim little madam
Who taught me the rudiments, pot-hooks and all,
And who thought to expel all the sin left by Adam,
By thrashing it out with that switch on the wall;
I've been horsed o'er the knees of that maiden so human,
With my back to the foe and my face to the floor,
And I thought how men prate of the soft touch of woman,
For each touch drew a blister, each stroke woke a roar,
In that day of tough switches and very thin breeches,
When correction was pressed both behind and before.

I survived all the blows, and married the daughter
Of that muscular schoolmarm whose blows fell like rain;
Now her roguish grandchildren defy her with laughter;
Their tricks she approves,—mine she punished with pain.
And though I remember of no interceding.
When she put in the blows with a switch or a rule,
If a grandchild I whip there's a grandmother pleading,—
'Tis the granny who flogged me of old in the school,
With the toughest of switches, her sharpest of switches,
That started a boy like the kick of a mule.

How we boast of advance in the secrets of learning,
How to cram the young heads we take infinite pains,
And forget inward pangs yield to blisters and burning,
That the switch hath oft quickened both conscience and brains.
To four minor senses we're often appealing;
Each one to our aid, in correction we call,
But that old-fashioned sense, the keen sense of feeling,
No longer the rogue doth persuade or appal!
Yet to quiet confusion, or force a conclusion,
There's a mission to-day for that switch from the wall.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

HALTON.—The Halton County Teachers' Association met at Oakville on October 28th and following days, when papers were read on the subjects: "Reading," "Curiosities of English Spelling," "How and when to teach Fractions," "Grammatical Definitions," "Entrance Examinations," How to teach History," &c. The papers were prepared with care, and brought very fair discussions. A paper on Arithmetic, by Mr. Bruce, of Waterdown H. S., was worthy of special notice. It showed much research and careful study of the subject by the essayist. Rev. Mr. Meikle, M.A., of Oakville, delivered a very good address to the teachers. Dr. C. Freeman, of Milton, read a very practical and pithy paper on School Hygiene, which was well received by all who heard it. A committee was appointed to report on the Adornment of School grounds and general tidiness of school premises. A committee on School Teachers' residences reported in favor of having residences provided for all teachers. The Superannuation Fund was considered, and steps taken to place the views of the teachers of this county before the Legislative Committee in as good a form as possible. Our worthy Inspector, Mr. R. Little, was pleasantly surprised on Friday evening by the presentation of a gold watch and chain.

Norval, Nov. 1, 1880. R, COATES, Secy.

EAST GREY TEACHERS' ASSOCIATION.—The semi-annual meeting of this Association was held in Andrew's Hall, Thornbury, on Thursday and Friday 14th and 15th ult. The attendance was not large, but those present seemed to take a deep interest in the subjects brought forward, which were generally of an interesting and suggestive nature. The forenoon session of the first day was occupied chiefly in arranging routine matters. In the afternoon, the President, Mr. A. Grier, I. P. S., gave his address on "Education." In it he said he was sorry to say that a system of cramming is adopted in public schools, high schools and collegiate institutes, which has the effect of cultivating the superficial powers of memory. Any teacher who adopts that plan, does it simply to secure his own position in the eyes of the trustees, or to gain a reputation by having his pupils pass the intermediate examination. He was not surprised at the public school trustees blaming teachers so much for the failure of pupils in not passing the entrance examinations to high schools, or any other examination, when the high school trustees are now in the habit of dismissing the head master if his pupils are not successful in passing the Intermediate. He advised the teachers to study continuously if they desired to excel in their work, for their minds would become deserts if they did not draw daily from the fountains of their calling.

Mr. Robert Hamilton read an admirable paper on the Art of Teaching, clearly showing when the analytical and synthetical processes may be employed separately, and when combined. He gave many useful hints drawn from his own practical experience, applicable to the management of pupils and to the bearing of the teacher.

The subject gave rise to an animated discussion, which was maintained chiefly by Messrs. J. Farewell (Sec.), M. McKinnon, J. Tait, Dr. Donaldson and the President. Mr. George Lindsay, V.P., delegate to the Provincial

Association, gave a very interesting account of the proceedings of that body, after which the session was adjourned.

At 8 p.m. a public entertainment was given in the same hall, which was well filled with a very respectable audience. The Clarksburg brass band, under the efficient leadership of Mr. Henderson, performed some choice music, and the Local Glee Club sang several well-rendered pieces. The Misses Lindsay and Gilray gave each a select reading; the Misses Armstrong sang a duet; Mr. Tait addressed the meeting and contributed a humorous reading; Messrs Treadgold and Rorke gave readings, and Mr. Fawcett a recitation. The repeated commendations of the audience testified to the satisfactory nature of the efforts made to please them. Mr. George Lindsay, Vice-President, occupied the chair and received a cordial vote of thanks, after which the entertainment was concluded with the National Anthem by the band.

The first business transacted on the morning of the 15th was the election of officers, resulting as follows:—President, Mr. A. Grier; Vice-President, Mr. George Lindsay; Secretary Mr. J. Farewell; Treasurer, Mr. R. Hamilton; Auditors, Messrs. McKinnon, Boyd, Hamilton, Smith, Honeywell, Mills, Treadgold, and Dr. Donaldson.

Mr. Treadgold then took up "Factoring," which he handled in a very expert manner. He recommended the teachers to study Dr. McLellan's Teacher's Hand Book on the subject. Mr. J. Whyte introduced a project of Mutual Life Insurance for the teachers, which he thought was very needful under existing circumstances, but as the matter was yet only in embryo, he thought it wise to hand it over to a committee to report at next semi-annual meeting, which was agreed to. Mr. J. H. W. York read an excellent paper on "Penmanship," advocating more attention to the subject in schools, and a style in accordance with the future business requirements of the pupils. This style he said was to be found in Beatty's copy books, which ought to be in general use. He recommended slate pencils set in wood for younger children, as less liable than the others to spoil the method of holding the pen.

The Rev. Mr. Elliott next read an essay on "Good Reading," which was very much appreciated. On the motion of Mr. Farewell, seconded by Mr. Lindsay, he was accorded a hearty vote of thanks and made an honorary member of the Association.

Mr. John Tait gave a very practical and useful elucidation of the mystery of Fractions, showing their applicability in solving some abstruse problems.

A club was formed in the Association to subscribe to the CANADA SCHOOL JOURNAL, many of the members testifying to its merits, and the valuable aid it has been to them in their professional work.

The next meeting of the Association will be held in Thornbury next May.

NORTH HASTINGS.—At Madoc on Sep. 30th and Oct. 1st. In the afternoon session of Sep. 30 an essay on "Writing" was read by Mr. Sutherland, H. M. Stirling, P. S. He recommended month head lines, as the use of the black board. A discussion of the subject followed, in which Messrs Johnston of South Hastings, Horton, Mackintosh, Mulloy and Williamson took part. Mr. Riddell read an essay on "How to teach School Arithmetic," a subject on which comment was made by Mr. Johnson. Mr. Mackintosh read a paper on "Multiples, Fractions and Reduction." Mr. Buchan, M.A., then arrived and was welcomed with applause. In the evening Mr. Buchan delivered his lecture on "Poetry and Politics."

Friday. Mr. Kirk, H. M. Madoc M.S., took up some difficulties in Algebra. Mr. Buchan discussed the subject of Literature in Public Schools, and gave a thorough analysis of a lesson in the 4th book explaining his method.

Afternoon session. Mr. Buchan addressed the teachers on "Grammar." Mr. Wood, Madoc, read an essay on "Morals and Manners." Mr. Buchan on the subject of reading in the fourth and fifth classes. A unanimous vote of thanks was given to Mr. Buchan for his valuable assistance. This convention, which was a most successful one, was varied by the occasional introduction of music by some leading vocalists of Madoc and vicinity.

RESTIGOUCH COUNTY TEACHERS' INSTITUTE.—The fourth annual meeting of the Restigouche County Teacher's Institute was held at Charlo on the 2nd and 3rd of Sept., 28 members present. President Nicholson introduced Mr. Cox, the new Inspector, who spoke at some length. The first day's work consisted of:--A first lesson on "The Table of Linear Measure" by Miss Nancy Robinson; an essay on "Momentum" by Mr. John Lawson; and an essay on "School Discipline" by Miss McCormack. In the evening Mr. Cox delivered a public lecture on "Education." Friday forenoon was occupied by a first lesson on Grammar, by Miss Ferguson; and a general discussion of the "Conditions of Successful Teaching." In the afternoon Mr. A. Ross, A.B., addressed the Institute on "Light and Color," after which he gave a popular description of the formation of the coal measure. At the request of the President, Mr. Lawson gave a lesson on the "Unitary Method in Arithmetic." The next meeting is to be held at Dalhousie on Thursday and Friday, the 9th and 10th of July, 1881. The officers:—Rev. T. Nicholson, President; Inspector Cox, Vice-President; Geo. T. Dawson, Secretary-Treasurer; A. Ross, A.B., and Donald McLean additional members of committee.

LANARK COUNTY.—At Perth, on 15th and 16th Oct., the President, Mr. N. L. Slack, in the chair. After the President's address, Mr. I. P. Anderson, of Balderson's Corners, read an essay on "Dull Boys," Mr. B. Lawe, of Almonte, on "Geography," Mr. A. W. Burt, of Perth, on "Drawing," Mr. Bowerman on "Reading," Mr. Beer, on "Vulgar Fractions," in conceit with a number of the Perth High School pupils who volunteered for the purpose. Mr. A. Gutridge furnished an excellent paper on "Grammar."

RUSSELL COUNTY.—At Bearbrook, on 1st and 2nd inst., Rev. John May, M.A., of Ottawa, gave an excellent lecture on "What shall my calling be?"

EAST MIDDLESEX.—On 23rd ult. Mr. W. J. Eddy gave an address on "The Teacher's work out of school hours;" Mr. J. D. Hunt, of Putnam, on "How to make the School Attractive;" the President, Mr. Dearness, on "Primary Teaching." "School Discipline" was then discussed by Mr. Donaldson; Mr. W. D. Ekhert and others continued the work of examination at the High School entrance examinations, and a motion was carried to petition the Minister of Education that such examinations be in future conducted by the Board of County Examiners.

EAST LAMBTON.—Met at Forest on 14th and 15th Oct. Papers were read on "Circulating Decimals" by Mr. J. McKeown, "Geography of Dominion" by Mr. R. C. Whittel, "Case" by Mr. Buchan, M.A., "Second class Spelling" Miss Seager, "Infinitive Mood" Mr. Buchan. On Friday Mr. D. N. Sinclair discussed "Writing," and Mr. I. Brebner, P. S. I., "Object Lessons;" a lecture on the "Origin of the English Nation" was then given by Mr. Buchan, High School Inspector.

HALDIMAND.—Met on 8th and 9th instant. Mr. Moses, Chairman, invited an expression of opinion from teachers as to the best book on each subject, with a view to uniformity. It was moved by Mr. Telford, seconded by Mr. McNevin, and *resolved*, That in the opinion of this Convention, the Canadian edition of H. Smith's Arithmetic for senior classes, and Kirkland and Scott's for junior classes, are preferable to any other. A report of committee appointed on the subject also unanimously decided that Gage's editions of Swinton's Language Lessons, owing to the uniformity of its definitions, with Mason's Grammar, is preferable to Campbell's as an introductery text-book on Grammar. An address on "The Education System of Canada" was then delivered by the President, R. P. Echlin, B.A. The address condemned the undue prominence given to mathematics in the schools and at the examination, the speaker holding that more practical benefits and a higher tone of education arise from a thorough knowledge of the history and literature of our own race than from mathematics. He criticized the neglect of reading and writing in High Schools.

WEST KENT.—The semi-annual meeting of this association was held at Chatham on the 7th and 8th October. Over a hundred persons were present, including the Rev. C. McColl, P. S. Inspector for Chatham, and Mr. W. Nichols, M.A., P. S. Inspector for West Kent. Miss Dawson of the Central School read an essay on Composition, which a vote of those present requested her to publish. The proceedings seem to have been conducted in a liberal and harmonious spirit.

NORTH RIDING OF ESSEX—The teachers' association met, with the French Division, in the Windsor Model School on October 7th. Mr. Buchan, H. S. Inspector, was warmly welcomed. The importance of keeping up the study of French, especially in that part of Canada, was discussed with much spirit and thoroughness by MM. Rocheleau, Curriar, Meloche, Bourret and Reaume, Mr. Ross, M.P., joining in the debate. The president then delivered his annual address, on the connection between Education and Patriotism. Mr. Standish read a paper on "Time Tables," which was discussed by Messrs. McHugh, Morrison, and Ross, M. P. Mr. McNeil furnished an essay on Etymology, a subject also commented on by Messrs. Chenay, Sansburne and Buchan. The latter said he thought such studies must be particularly interesting to the teachers of Essex who had to teach two languages. He recommended the use of the highest authorities, such as Max Muller. Mr. Ross, M.P., then gave an excellent practical lecture on Mistakes in Reading, and Mr. Buchan an interesting account of the facts with regard to Primeval Man. A paper on Penmanship was read by Mr. A. J. Henson. On Saturday, a committee was appointed to determine the principal epochs of English history as a guide to teachers. Mr. Garragher then read an interesting paper on the subject of Discipline, and Mr. Henson one on Child Life. Mr. McNevin read a paper on "The Best Way of Teaching Interest to a Junior Class." This is said to have been one of the most successsful conventions ever held in this county.

DURHAM.—Met at Bowmanville on the 9th October. Mr. W. C. Tilley, M.A., and Mr. W. W. Tamblyn, M.A., had a discussion as to the marking system at entrance of High Schools. A discussion also took place on the Superannuation question, in which Messrs. J. Crawford, Tilley, Barber, Ellis, and others, took part. The following resolutions were carried:—

1st. That no portion of contributions to the fund be returned to teachers who leave the profession before spending ten years in service.

2nd. That all High and Public School teachers and inspectors be required to contribute to the fund, and

3rd. That the annual fee be $4, also an additional $1 for every $100 salary received above $400.

Mr. J. Hughes then read an interestfng paper on the Phonic Method of teaching reading.

North Riding of Essex. Met at Windsor on Oct. 7th. Mr. Buchan, H. S.P., was warmly welcomed. After the President's lecture on the "Connection between Education and Patriotism," papers were read by Mr. Standish on "Time Tables," by Mr. McNiel on "Etymology." Mr. Ross, M.P., gave an excellent practical lecture on "Mistakes in Reading," and Mr. Buchan an essay on "Primeval Man."

On Friday morning Mr. W. J. Gage addressed the teachers in the interest of the Canada School Journal. A committee appointed to consider Mr. Gage's proposals reported that a club of 80 would have the School Journal at .65 per copy.

North Riding of Essex.—Mr. J. R. Brown addressed the Convention on "How a teacher should spend his time." Various suggestions were made, Mr. Brown advocating and Mr. C. N. Ashdown deprecating a good deal of attention being given to visiting the parents of children. Mr. Thomas urged that, above all else, teachers who wished to be in advance of the times should read the best educational journals. As to superannuation, the following was carried: That twenty-five years' service in the profession, or having attained the age of fifty years, entitle teachers to superannuation; that no part of the annual dues be returned to any teacher; that the allowance be increased, and the annual fees also; that provision be made for the widows of deceased superannuated teachers. A motion was also carried, asking Parliament to repeal the Act shortening the summer vacation.

West Huron.—The semi-annual meeting of this Association was held in the Goderich High School at 10 a.m. on the 8th ult. At this session about 50 teachers were present, and during the day the number was augmented to about 130, besides several of the model school teachers in training and some friends of the teachers. Mr. H. J. Strang, B.A., President, gave his opening address. The minutes of previous meeting were read by Mr. W. R. Miller (Sec.-Treas.) and confirmed. On motion, Miss Bond, with Messrs. Cantellon and Halls, were appointed a committee to arrange order of business and subsequent sessions. Mr. Elliott was substituted for Mr. Strang on Promotion Committee; and the following were appointed: Resolution Committee—Messrs. Huston, Brown, Caverhill, McGillivray and Cresswaller; Audit—Messrs. McAndrews and Orr; Question Drawer—Messrs. Strang, J. R. Miller, and Halls. The president, in the absence of the regular delegate, gave a summary of the subjects brought up at the Provincial Association. He said that the prevailing opinion held there was that recent measures were retrogressive rather than progressive, but he was glad to see the teachers from the Huron District spoke out manfully. It was thought advisable to have a committee to watch the legislature, and three from each section were appointed to resist any change that may be made adverse to the interests of the teachers. He felt with others that the claims of English over Mathematical subjects were pushed into the background, and that the real test of efficiency should rest with the former. The High School masters present passed a resolution expressing the injury that was being done from the undue prominence given to mathematical subjects, to the serious neglect of English. He held with Prof Young that the country was being mathematized to death. The High School masters also passed a resolution strongly in favour of changing the rotation of examiners, so that complaints about members of the Central Committee and others interested in the text-books might be done away with. He thought that a great many of the best reforms were brought about by patient and persistent agitation. Mr. J. R. Miller, I.P.S., said that the Provincial Association made the profession what it is to-day. There should be changes made, and some useless branches were lopped off, but others still remained. He noted many questions on the Algebra paper of last examination which were unfair. In the 1st class there was too much of what was called "catch-work"; and there are some persons who have spent a good deal and used every effort they possessed to become teachers, but being caught by such catch-work, had their whole prospect in life destroyed. He moved a vote of thanks to the President for his able report; seconded by Mr. H. E. Houston, and carried unanimously. Second Session, 2 p.m.—Mr. J. W. Morgan, in a very interesting and masterly manner, showed his plan of teaching mensuration. Beginning with the simplest measurements, he demonstrated in the most practical way the dependence of the more advanced rules upon first principles, and illustrated his method by figures cut in leather and paper. At the conclusion he was warmly applauded and highly complimented by the President and several of the members. On motion he received the thanks of the meeting. Dr. T. F. McLean next read a paper on Hygiene of the Brain. He recommended good exercise to circulate the blood and stimulate the brain, which from study becomes heated and unable to do its work effectually. This exercise may consist of a change of subject or physical exertion. He said that Dr. Mosso, of Turin, had devised an apparatus called a plethysmograph, designed for measuring the volume of an organ. It is capable of measuring the relative amount of mental power required by different persons to work out the same problem, and it was suggested it should be brought into the examination-room to test the mental capacity of the students. He (Mr. McLean) said that the school-room should be a place not only for mental exercise, but physical. An active dance would be of use if it would not detract from the dignity of the institution. Too much study in school often resulted in weak sight, especially when the light was not properly admitted. Light should come in from the left side of the apartment, and the walls should not be white. A cordial vote of thanks to Dr. McLean was proposed by Mr. J. R. Miller, I.P.S., seconded by Mr. Halls, and carried unanimously. Permission to publish the paper was requested and granted. Mr. H. J. Strang cleared away in a lucid manner the difficulties in analysis and parsing which had been sent in for that purpose by the teachers, after which Mr. G. W. Ross, M.P., who on entering was received with enthusiasm, gave a humorous and instructive address on the duties of teachers, as exemplified in the following five commandments of the teacher's decalogue:—1. Thou shalt have no other profession than this. 2. Thou shalt not make any counterfeit of thy profession. 3. Thou shalt not talk little of thy profession. 4. Remember to keep thy holidays sacred. 5. Honor thy trustees, that thy days may be long in the land. In the evening a crowded audience assembled in the Temperance Hall. A. M. Ross, Esq., M.P.P., occupied the chair. The Chairman, Mr. Strang, and, Mr. J. R. Miller gave short addresses, bearing on the work done in the schools of the county. Mrs. Harries gave an effective reading; Miss Cooke and Miss Traynor sang each a duet with Mr. Saunders, who also contributed two solos; and Mr. Collins sang, with great ability and taste, a solo which displayed his splendid voice to advantage. Mr. G. W. Ross, M.P., then gave an address on the development of the faculties of children, chiefly discrimination, retentiveness and constructiveness. The address was marked by thrilling eloquence and an exhaustive exposition of the subject. During its delivery he was frequently applauded, and a vote of thanks was accorded him with acclamation. A similar compliment to the chairman, the other speakers, and those who took part in the entertainment was passed, and the meeting was closed by singing the National Anthem. Third Session, Saturday, 9 a.m. Minutes of previous meeting read and approved, after which Mr. G. W. Ross, in a clear, practical manner, showed how good reading should be taught. Mr. J. R. Miller, I.P.S., gave some excellent advice in the matter of school routine; dwelling especially upon drill, order, cleanliness, pure air, personal neatness &c. Mr. G. W. Ross then took up with great ability the subject of school management, in an address which was highly appreciated, and for which, together with his valued services at previous sessions, he received the cordial thanks of the association. The concluding exercise of the Convention was an explanation by Mr. J. A. Moore, B.A., of his method of teaching composition, which he ably illustrated. All the subjects brought forward at the several meetings were well discussed by the members. The Auditors' report was read and adopted: it showed a balance of $84.00 in treasurer's hands. The officers for ensuing year were then elected as follows: President—Mr. H. J. Strang, B.A.; 1st. Vice-President—Miss M. A. Traynor; 2nd. Vice-President—Mr. G. Baird; Sec.-Treas.—Mr. W. R. Miller; Executive Committee—Misses Bond and Bucher, with Messrs. Houston, Halls, and Connolly. The Resolution Committee reported as follows:—*Resolved*, That this association strongly approve of the following resolutions passed at the last meeting of the Provincial Association in the High School Masters' section: 1st. That this section would desire to impress upon the Minister of Education, the advisability, in the interests of education, of adopting the principle of "rotation of examiners" as put into practice in connection with the examination of the University of Toronto. 2nd. That taking into consideration the object of the International examinations and the instructions given to the examiners by the Honorable, the Minister of Education, in his circular of December, 1877, this section considers that the paper on English Literature given at the last examination assumed too great maturity on the part of purely Intermediate candidates; that the paper on arithmetic was too difficult, while that on algebra was wholly unsuitable. Your committee also submit:—That the recent changes made by the Provincial Legislature with regard to shortening the summer holidays were unwise and uncalled for in the best interests of education. On motion, the report was received and unanimously adopted. The Examination Committee was requested to formulate resolutions regarding what the Association considers the undue prominence given to mathematics in the examination of teachers; also, that the approval of the majority of the members of the Central Committee should be required in the case of each examination paper, and that candidates who fail in only one of the examination groups should be re-examined only in the groups in which they failed. Mr. George Baird, as chairman of Committee on Promotion Examination, reported fully the attempt made to obtain the co-operation of the East Huron Teachers' Association, in order to have a uniform system of promotion throughout the county. On motion, a vote of thanks was given to the members of committee, and their expenses were ordered to be paid. *Resolved*, That the Committee on Promotion Examinations be re-appointed, to act in conjunction with any committee that may be appointed by East Huron Association. The Association then adjourned, to meet in Exeter sometime in January.

TORONTO.—The second semi-annual meeting of the Toronto Teachers' Association was held on the 17th and 18th September, in the Wellesley School, the President, James L. Hughes, Esq., (P. S. I. City) in the chair. Teachers present, (including those in training in Yorkville Model School) 170. Mr. G. R. Powell read a paper on "Percentage," showing it to be of the natufe of fractions, and classifying the problems in commission, insurance, interest, etc. The essay was well received. Dr. Playter read an interesting paper on School Hygiene, dwelling upon the principal points in Hygiene that should be taught in the Public Schools —air, exercise, food, cleanliness, etc. Votes of thanks were passed to Mr. Powell and Dr. Playter for their excellent papers. The Convention adjourned to meet at 8 o'clock p.m., in the Theatre of the Normal School.

Eight o'clock p.m., the Convention met in the Toronto Normal School, the Hon. A. Crooks, Minister of Education, in the chair. The hall was well filled. The Minister addressed the audience, and introduced the lecturer, Rev. Professor Calderwood, of Edinburgh (Scotland), who chose for his subject "The mind in relation to the brain." The lecture was a very interesting one, and thoroughly illustrated by suitable diagrams, used for the first time in Canada. Dr. Geikie moved, seconded by Mr. James L. Hughes, a cordial vote of thanks to Professor Calderwood for his excellent lecture, which was carried amidst applause.

Second Day.—Saturday.—The Convention met at nine o'clock, the President in the chair. Some time was taken up in discussing revision of regulations for guidance of parents. Miss Lewis introduced "Vocal Drill" in relation to reading by exhibiting a "Table of vocal exercises" by Prof. J. W. Shoemaker, the Convention joining in the exercises. Mr. R. Lewis followed, illustrating "Voice Culture." Vote of thanks passed to Mr. and Miss Lewis for their exercises. F. F. Manly, M.A., of Collegiate Institute, read a paper on "How to teach Euclid" to a class of beginners, illustrated by blackboard exercises. Vote of thanks passed to Mr. Manly for his paper and exercises. *Afternoon Session.*—Discipline on regulations relating to pupils resumed. It was considered necessary that a class for "confirmed truants" should be formed with as little delay as possible in the city schools. Miss A. Freeman read a very interesting essay on the "Teachers' Temptations," or every day life in the school-room, which was listened to with marked attention; the composition and delivery were much admired. Cordial vote of thanks passed to Miss Freeman for her paper. Resolutions were passed, changing the time of meeting from January to February, and from September to October, in each year. Also the advisability of the Association presenting a prize annually at the Combined Examination. The Convention having joined in singing the National Anthem, adjourned till the annual meeting in February, 1881. Thus ended one of the most successful meetings the Association has yet held.

LINCOLN TEACHERS' ASSOCIATION.—The members of this association assembled in the Central School, St. Catharines, at 10 a.m. 22nd ult. After the minutes of last meeting were read and adopted, the President, Mr. J. B. Gray, delivered his opening address, which chiefly referred to the duties of teachers, especially those just entering the profession from the Local Model School. The Rev. Mr. Wetherald, in the absence of Mr Somerset, I. P. S., gave a short address to the teachers on the religious and moral nature of their work.

The Committee appointed to consider means of promoting physical well-being of the children attending the schools, presented their report It referred (1) to ventilation, heat, and cleanliness in the school-room as directly affecting not only the health, but also the mental activity and brightness of teachers and scholars. (2.) The careful oversight of the physical condition of the children with reference to the observance of the ordinary rules of health in their habits and amusements, and to the age at which children should begin school, as well as the length of their daily application to study. (3.) The use of physical exercises calculated to develop symmetrically every part of the frame, and to give grace and vigour to its movements, thus preventing habits of stooping and other imperfections in form and gait. The report, which was elaborate and exhaustive, was adopted, and ordered to be printed for circulation in the county. In the afternoon session the Committee on County Promotion handed in their report. It consisted of fixed rules for the examination and promotion of pupils so as to secure uniformity throughout the county. The plan suggested by the committee was one that would tend to give better satisfaction to parents, prevent confusion on a change of teachers, &c. After a short discussion it was ordered that the report be printed and a copy be sent to every teacher and board of trustees in the county. The Committee on Physical Exercises drew up a system of short drill and calisthenics to occupy about five minutes at a time. They recommended the use of "Drill and Calisthenics," by J. L. Hughes, and "How to get Strong," by W. Blaikie, as suitable works in the hands of every teacher. This report was also adopted. Mr. Rittenhouse exemplified, by teaching a class, his method of giving instruction in Grammar. A discussion on methods followed. In the absence of Mr Seath, Mr. Robertson took up Arithmetic, solving some difficulties in a manner that elicited the highest satisfaction and approbation The evening session was entirely occupied by Mr. Wm. Scott, head master of the Provincial Model School, Toronto, whose able services were secured to conduct a Teachers' Institute. He selected "How to deal with indolent pupils" as his subject, and the clear, practical, common-sense manner in which he handled it would almost lead one to think that the "indolent pupil is a somewhat mythical character. He (Mr. Scott) desired to trace up every effect to its cause, and the cause of indolence in pupils may be traced to the teacher, through neglect in seeing that home study is duly performed; to the parents, by keeping the pupils too often away from school; to the home influence, associates, or other forces at work on the pupil himself. It is the teacher's duty to trace the evil to the root and then deal with it judiciously. Many plans have been adopted to remedy the evil, but no fixed rule could be adopted, as different dispositions require different treatment. He did not approve of flogging, but as "persuasion is better than force," he would try the moral method and use occasional approbation when he sees a fair opportunity, private admonition, or deprivation of certain privileges, but principally sympathy.

Second Day.—Although the weather was very inclement, the attendance was large and the interest evinced by Mr. Scott's valuable lectures was perceptible throughout both that and the afternoon sessions. The lecturer took up "Arithmetic," handling it in a masterly manner, beginning with the simplest rules and exemplifying plans for making the science of numbers attainable by very young children; avoiding abstruse rules, which, like the ancient method of teaching Latin, gave a teacher an opportunity of showing off his profound erudition in the presence of his pupils, and left them little wiser than they were. He advocated first principles, teaching by examples, quick work, mental exercises, use of black-board, attention to slow pupils, self-reliance, and short methods.

He finished an extremely interesting and instructive lecture by solving some complex problems in a ready, able manner, which was highly appreciated, and in replying to several very intelligent questions put by the members.

A large number of the teachers gave in their names as subscribers to the CANADA SCHOOL JOURNAL, and a club was formed in the association to enable them to procure the periodical at the reduced club rate for teachers.

At the afternoon session, Mr. Wm. Scott, M.A., took up "History for Entrance Examination in High Schools." He showed the importance of learning the subject as a matter referred to in every-day life; deprecated the system of cramming with unimportant dates, or dwelling upon the records of "blood and thunder"; demonstrated how pupils could be made to take a live interest in the study by tracing certain effects to their causes; and illustrated his plan of teaching the subject by taking up the feudal system and the American War as his basis, and working out the details of each with great judgment and ability.

In reply to a teacher, Mr. Scott recommended Epoch Primers as the most suitable text book for a pupil in the fourth class; he would not use a book in the third, but would give oral lessons, which might be used with advantage as subjects for composition. On the motion of Mr. W. F. Rittenhouse, seconded by Mr. J. Hippoe, a hearty vote of thanks was accorded with acclamation to Mr. Scott, to which he briefly replied. The convention then adjourned, the next time of meeting being left to the arrangement of the executive commitee.

PRINCE EDWARD COUNTY TEACHERS' ASSOCIATION.—The Convention of this Association was held in Picton on the 29th and 30th ult, and was largely attended. Mr. G. D. Platt, B.A., President, opened the proceedings at 9 a.m, with a sound practical address. The minutes of previous meeting were read and approved, after which Mr. T. F. Spafford read an excellent essay on School Discipline, which gave rise to an animated general discussion. Mr. W. T. Kinney took up the subject of "Junior Reading," in which he advanced some ideas that met with sharp criticism, but defended them with ability and good humor. Simple Rules of Arithmetic met with a clear elucidator in Mr. W. J. Osborne, who showed much thoughtful care in the preparation of the subject. Mr. R. Dobson, B.A., handled English Composition in a manner testifying to refinement and deep study, and earned the well-merited applause he received. Dr. McLellan, who on coming forward was welcomed with enthusiasm, selected Euclid as his subject, and it is needless to state how he handled it. The study is one which is not generally in favor with pupils, but he showed how it could be made very interesting by a live teacher. He recommended pupils to read the history of the science, to make neat figures, to get into the logic of every proposition, to understand clearly each step, not to mix up hypothesis with proof (a frequent cause of mistake), and to practise perseverance, as every difficulty is a key to success. Pupils think the *pons asinorum* almost impassable, but it is because they are not well drilled in the previous proposition of which it is only a deduction. He strongly advocated teaching deductions as tending to develop reasoning faculties, beginning with those of the simplest kind, as a preparation for the work that follows. He advised a thorough mastery of every syllogism, for if the student carries away any difficulty which he cannot surmount, it is like an accumulating residuum that will ever impede his faculties. At the conclusion of this lecture the meeting adjourned. An open meeting of the Association was held in the evening in the City Hall, which was attended by a large and appreciative audience. The chair was taken at 7:45 p.m. by Mr. G. D. Platt, B.A., President, who, in introducing Dr. McLellan as lecturer for the evening, said that to no one man in the Province, interested in education, is more credit due than to the gentleman who would address them, and the teachers held his lectures and visits in high esteem. On coming forward Dr. McLellan was received with applause, and after a few preliminary remarks he entered on

his subject, National Education. He said he believed in education because he believed in the dignity and destiny of man. He repudiated the doctrine of Evolution, which teaches that man is only a few removes from the brute creation, for if such could be established and if the distinction is only one of degree and not of essential difference of kind, then there is no claim upon which we can base the doctrine of National Education. But we are inclined to think differently by our researches in the Divine word; a man bears in mind the lessons taught at his mother's knee, lessons as old as the everlasting hills, telling of his origin, his inheritance and his end. The superiority of man is seen in the history of intellectual pre-eminence, the mind of man is set in judgment by the universe. Man walks erect and lifts his forehead to the stars, and his hope pierces far beyond the stars. Man cannot attain his true destiny, except in society, which as a Divine institution, lays on him the duty of self-sacrifice, and asks him to take up his position as his brother's keeper. Upon this principle we base the edifice of education, which is the bringing out in all their harmony, the powers and energies of the mind; and society cannot escape the responsibility of aiding the object of education so far as it may be provided. If the Church were in a position to take up the matter, it would be their legitimate work, but as they are not, the State should provide an opportunity for educating those whose abilities fit them for it. The great object the educator should have in view is to develop the mental power of the nation in all its grandeur, and to make men good citizens. It may be thought the duty of the State in this respect need go no farther than to afford a good primary education, but it is requisite they should do more, for when people occupy a high social position, they should be educated to know how to grace that position. There is no single industrial art in which education is not of advantage; if a man is to be a shoemaker, education will make him a better workman, etc. The lecturer contrasted this country with uncivilized Africa, and showed how the superiority and power of mental energy asserted its sway in the improvement and development of industry and science. He praised the efforts made by Scotland in the education of her people, many of whom went directly from the parish school into the University, and returned to be teachers of the parish school. Thus it is if you want a man to manage a work shop, or a ruler to govern an empire, you may go to the Scotchman (applause). In Germany, the system of education is most effective, for the nation has thereby become one of the greatest in the world, and her progress in science and art indicated the wisdom of those who established state education. In Ireland the fair faces and warm hearts of that precious "gem set in the sea," beam and throb with the brightness and integrity arising from National Education. He honoured the Irish peasant for making a sacrifice that his family may be educated. They are sent forth to every land, and take with them the benefits of mental culture they receive at home. With many, however, their native genius is so great that they do not require any education at all (laughter). It is sometimes said that it is not fair to ask the masses to make provision for educating the higher classes, but he was glad to say that he always found the wealthy men of Picton ready to honour men as men should do, and te give of their wealth to further the cause. He considered the son of the agriculturalist should be fitted to take his place in the highest ranks if his ability enabled him to do so. An objection was made that the result of all this education would be that after a time there would be no "hewers of wood and drawers of water," like the party in New York, who said that the girls were getting such a fine education at present, that shortly there would be no servants (laughter). He (Dr. McLellan) often had opportunities of mixing with some of these high class grumblers, and he found, generally speaking, that a great need of education existed among themselves. He related some anecdotes to bear out these remarks, which caused much laughter; and in conclusion, urged the teachers to faithful duty, to the cultivation of high principles in their pupils; to teach them not to despise the industrial arts, but to improve their minds so as to improve mechanical skill, and to become benefactors to generations yet to be born. Mr. W. Ross moved a vote of thanks to Dr. McLellan for his brilliant lecture, which animated the audience by the pathos and eloquence with which it was delivered. He hoped the Doctor would often favor them with his presence. The vote was seconded by Mr. Platt, and carried enthusiastically. The meeting then adjourned. *Second Day.*—A very large number of teachers assembled at the morning session. Mr. Rothwell gave an interesting lecture on the Railways of Ontario, illustrating his subject by a map drawn with chalk on the blackboard. He answered some questions relative to the value of the subject as a school exercise. Mr. W. K. Bowerman exemplified the principles of measurement of angles, after which Dr. McLellan, by request, took up Algebra, and showed some handy methods of solving problems which are not to be found in the text-books. In the afternoon the officers were elected as follows:—President, G. D. Platt, B. A.; 1st Vice-President, B. Rothwell; 2nd Vice-President, R. B. Mastin; Sec-Treasurer, John Kinney. Auditors, John Wilson, R. M. White. Executive Committee, W. K. Bowerman, Blakely, A. T. Platt, J. H. Dulmadge, D. Clapp, H. M. Faul, S. B. Nethery, Mr. Nethery gave a most interesting and instructive account of his visit to the Islands of the Pacific. Dr. McLellan then gave an address to the teachers, marked by the sound practical ability which is his characteristic. On the motion of Mr. W. T. Kinney, a cordial vote of thanks was passed to Dr. McLellan for his invaluable services at the Convention. Next meeting of the Association to be determined by the ex-committee. Adjourned.

REVIEWS.

ELEMENTARY LESSONS IN ENGLISH.—*Teachers' Edition.* Boston: *Ginn & Heath, 80 cents.* The scholar's edition of this book has already been noticed in the Journal. The book before us is intended for the teacher's use, and we have no hesitation in ranking it as one of the most valuable books for teachers which we have seen. The preliminary discussion of the principles of oral teaching is admirable—worth more, in fact, than many of the expensive manuals of method. The book contains the text of the children's book entire, and, in addition, plans for developing the lessons of the text; observation lessons, dictation and text exercises, questions of oral and written reviews, materials for composition exercises; plans for conducting picture lessons, &c. Teachers who find "Grammar the dullest of all subjects," would find every page of this book a revelation to them.

CLASS BOOK OF MENTAL ARITHMETIC.—*London: John Walker & Co.* This is a small manual which gives capital suggestions as to the method of teaching Mental Arithmetic, and a large collection of examples for mental working. Mental Arithmetic is too often regarded as an exercise of thought rather than practice. We are glad to see that Mr. Murwood gives *only* examples which exercise the calculating or computing faculties, without troubling the reasoning powers. This is *true* Mental Arithmetic.

MOFFATT'S BRIEF HISTORY OF THE WORLD; BY JAMES MURRAY. *Price Two Pence.* This is a small primer about the size of the First Reading primer, contains a brief sketch of Mathematical Geography, and fully as much as should be taught in Public Schools concerning the physical geography of the Continents and the British Empire and dependencies.

THE SCHOOL-MASTER OF THE NINETEENTH CENTURY. *Translated from the German. New York: Daniel Slote & Co.* This work is a philosophical development of objective teaching, chiefly with a view to the natural growth of the mind, and the cultivation of language. It consists of a series of lessons, or rather of suggestive outlines of lessons on common things. There is more gold in it than in a bushel of the ordinary books on object lessons, but it may take a third reading to find it. Each part must be taken in connection with the whole before its full value can be seen.

ILLUSTRATED SCHOOL SPEAKER AND READER. Written by A. K. Isbister, M. A., LL.B. *London: Longmans, Green & Co.* This is a most valuable book. Its general aim is to teach, not merely a few specially gifted pupils, but all, to read well, and also to speak well. With this as his object, the author gives first a brief, but exceptionally clear and comprehensive explanation of the principles of elocution. This is followed by a number of exercises marked for emphasis and expression, and a very large collection of the most elegant selections to be found in the English language. There is also a capital chapter on *gesture*, with several pieces marked for appropriate action. The book concludes with extracts from foreign languages, Greek, Latin, French, German. The best feature of the book is the simplicity of its theoretical parts. The author's intention has clearly been to make his subject plain; not to lead his readers to think elocution a mysterious something, only to be comprehended by a favored few.

THE ELEMENTS OF EDUCATION. *C. W. Bardeen & Co., Syracuse, 15 cents.* This is one of Bardeen's Schoolroom Classics. It is a paper read before the Alumni State Normal School, by Mr. Charles J. Buell, one of the leading High School Principals of Eastern New York. He is evidently a clear-headed, earnest teacher.

MAGAZINES.

THE ATLANTIC MONTHLY for November begins with the first instalment of "The Portrait of a Lady," by Henry James, Jr. The scene of this, as of many other novels by the same author, is laid in England, but the principal characters are American. It promises well. "His Best" is a complete, well-told story. Mr. Richard Grant White contributes "Letters and Notes from England." The eighth chapter of the very interesting "Reminiscences of Washington," deals with the administration of President Tyler. "A True Republic" is a review of a work of that name written by Mr. Stickney, whose views as to the noxiousness of party are very much the same as those of the "Bystander." The remaining contents are: "The Jew's Gift," a poem by T. B. Aldrich; "The Silk Industry in America"; "Storms of Autumn," a poem; the third part of the "Intimate Life of a Noble German Family"; "The Future of Weather Foretelling"; "A Sleeping City," a poem; "Philosophy and Apples," by G. P.

Lathrop; "A Search for the Pleiades," by T. W. Higginson; "North Wind in Autumn," a poem; "What is a Fact?" a vigorous protest against materialism, by Elizabeth Stuart Phelps; reviews of "Mr. Aldrich's Fiction," "Recent Poetry," "Mahaffy's Greek Literature," "Shakespeare at l'Antiquite," and "An Englishman's England." "The Contributors' Club" forms the pleasing conclusion of a good number.

THE GENTLEMAN'S MAGAZINE for September offers a good and varied bill of intellectual fare. The twenty-third, twenty-fourth, and twenty-fifth chapters of "Queen Cophetua" maintain the interest of a remarkable story. Mr. Grant Allan's able and charming article on "The Dog's Universe" will lead all who read it to regret that misrepresentations arising out of an unreasoning bigotry or other causes prevented our Minister of Education from securing his services for University College. Mr. Alfred Rimmer contributes a very good paper on "The Fishes of Canada." Dr. Benjamin Ward Richardson writes on "The Philosophy of Fasting." The remaining articles are: "The Eclipse of Shakespeare," by Dutton Cook; "The 'Thunderer' Gun," by Daniel Pidgeon; "Literary Success a Hundred Years Ago," by Margaret Hunt; "Science Notes," by W. Mattieu Williams; and "Table Talk," by the Editor.

THE GENTLEMAN'S MAGAZINE for October presents an exceedingly good table of contents. "Queen Cophetua" increases in interest as the crisis of the plot approaches. Algernon C. Swinburne, the famous living poet, contributes an article on a famous dead one under the heading "A Relic of Dryden." Mr. Haweis furnishes a critical estimate of "James Russell Lowell, as Poet," Andrew Wilson writes on "The Science of Likenesses and its Meanings," Mr. John Amphlett on "Court Rolls," Mr. S. L. Lee on "Love's Labours Lost," and Mr. F. Duncan on "Hospitaller Work at St. John's Gate in 1880." Interesting "Science Notes" and "Table Talk" conclude an excellent number.

One of the remarkable features of the age is the demand for cheap editions of scientific works. To assist in supplying this demand, Messrs. J. Fitzgerald & Co., of New York, issue twice in each month, at the low price of fifteen cents, a number of what they call the Humboldt Library of Popular Science. The eleventh number has just reached us, and we find it to contain half of an interesting work, The Naturalist on the River Amazon, written by Henry Walter Bates. We heartily commend the enterprise.

STEWART'S TEACHER'S MAGAZINE for October, 1880. Contents: The Kindergarten, Lessons in Chemistry for Young Students, Analysis and Composition, Reading, Easy Lessons in Latin Translation and Parsing, Algebra Papers worked out, Lessons for Young Readers from Old Authors, Scripture Lessons, Domestic Economy, The Month, Correspondence. W. Stewart & Co., Holborn Viaduct Steps, London, E.C.

EDUCATION is the name of a new periodical devoted to the interests of education. Judging from the first number, it will deserve the support of the teaching profession The contents are: Text Books and their Uses, by Dr W. T. Harris; The Renaissance and its Influence on Education, by R. H. Quick, M.A.; Harmony in Systems of Education, by Dr. McCosh; and other valuable matter. It is edited by T. W. Bicknell, and published bi-monthly by the New England Publishing Company, of Boston. The price is $4.00 a year.

REPORTS, &c., RECEIVED.

Superintendent of Public Instruction, Michigan, Cornelius A. Gower, Lansing. A very excellent report containing capital suggestions from the Superintendent, and a complete report of the proceedings of the State Teachers' Association.

Superintendent's Report, Wisconsin, W. C. Whitford, Madison. This also contains a full account of the meeting of the State Teachers' Association. It has also valuable statistical and other information.

GREAT ENTERPRISES.

The present time is fruitful in schemes of great magnitude. There are already projected:

A new suspension bridge over Niagara river.

A new Atlantic cable in addition to that now in process of construction.

A ship canal across the Isthmus of Darien.

A ship railroad across the same strip of land, separating the two oceans.

A railroad over the Desert of Sahara, connecting Algeria and Soudan.

A canal which, conveying the waters of the Mediterranean into the sands of Africa, shall make a great inland sea and fertilize arid wastes.

The establishment of water communication between the Black and Caspian seas.

Add to these enterprises, most of which seem likely to be undertaken in the near future:

Ericson's scheme for utilizing the sun's heat.

Ericson's scheme for utilizing electricity.

The various plans of geographical discovery.

The solution of the mysteries of Central Africa and the civilization of the savages.

The destruction of the world's plagues.

The emancipation of every slave.

Universal education.

The adjustment of the relations of labor and capital.

Publishers' Department.

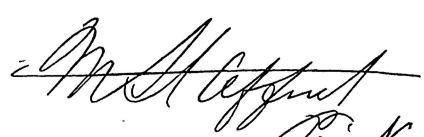
THE TEACHERS' CONVENTIONS.

So many of these meetings have been held during the past month that we are unwillingly obliged, through want of space, to hold over the reports of proceedings of some for our next issue. The Conventions have been very interesting this season, and the teachers who attended must have gone back to their schools edified and refreshed for their arduous and responsible work. In most of those which have already met, the CANADA SCHOOL JOURNAL has been adopted as the organ of the Association, and its circulation among teachers is thereby increased a thousand-fold. The feeling in its favor meets with general expression, and it is pronounced to be the most suitable paper for all grades in the profession. We have abundant evidence of this, likewise, from Educationists in different parts of this continent, whose opinion deserves the profoundest respect. We request a perusal of the extracts over the *fac-similes* of their autographs, giving their valuable testimony to its intrinsic merits.

We may state also that in its principles it is thoroughly unsectarian, and is subscribed to by persons of different creeds and all shades of politics, because we are careful to confine ourselves solely to what we always intended the JOURNAL should be—essentially *the teachers' paper*.

We thank the presidents and teachers of the several Associations in which it has been adopted, assuring them that nothing will be spared by us to make them well satisfied with the course they have taken respecting it. We trust the Conventions yet to be held will act wisely and copy their example, by taking advantage of the present opportunity for having a superior periodical at the price it is at present supplied to County Association Clubs.

The following extract from a letter sent us by Rev. Father Stafford shows the high opinion he has of the CANADA SCHOOL JOURNAL. Father Stafford is acknowledged to be one of the foremost in the cause of education, and his estimate of the JOURNAL is entitled to the consideration of all interested in school matters. He writes: "What a large journal yours is, compared with that of the Province of Quebec; yours is 32 pages, the other is 16! I wish there was a law compelling every teacher and every school trustee in the land to be a subscriber to the CANADA SCHOOL JOURNAL. I cannot think of any way they could invest a dollar that would bring them better value. Your journal has a name that implies for it a large circulation. It is called the CANADA SCHOOL JOURNAL. The New England *Journal of Education* is much dearer than yours—$3 per annum—larger, but matter not better."

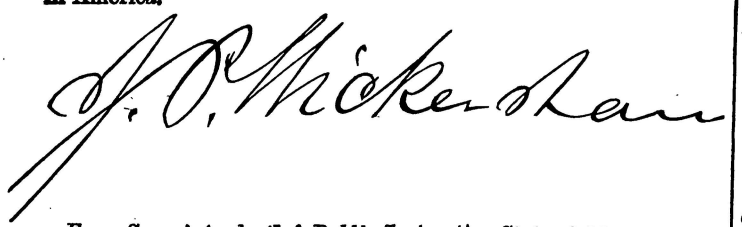


What some of the Leading Educationists of America say of

THE CANADA SCHOOL JOURNAL.

From Superintendent of Public Instruction State of Pennsylvania.

I have read the CANADA SCHOOL JOURNAL from the first number to the last. It is one of the best magazines of its class published in America.



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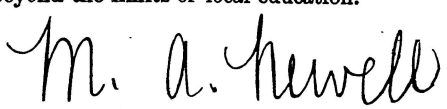

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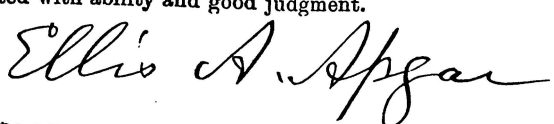

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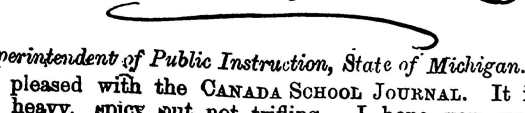

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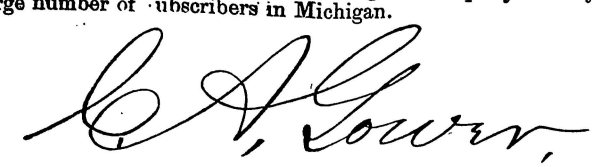

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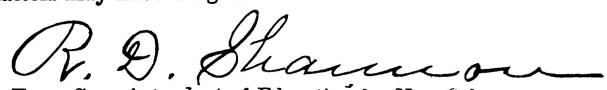

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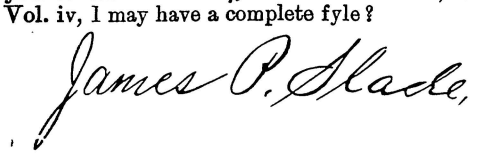

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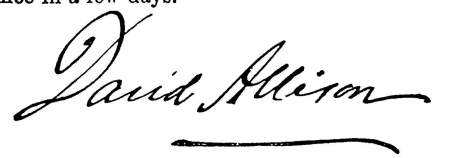

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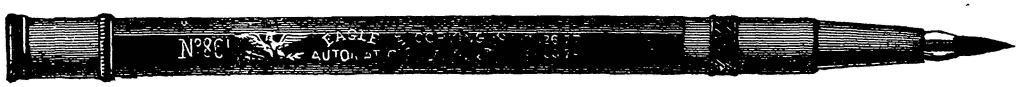

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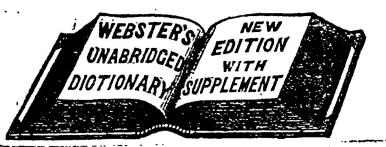

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VOL. V. TORONTO, DECEMBER, 1880. No. 43.

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The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

CO-EDUCATION OF THE SEXES.

There is no question about the fact that the admission of women on perfectly equal terms to all educational privileges is in accordance with what Matthew Arnold calls the "zeit geist," the Spirit of the Age. It is in harmony with all such steps already taken with admitted success, as the co-education of boys and girls, or the examination for women by the English Universities, or by Harvard College, and the undeniable good results of Vassar College for women, the Annex Institutions at Cambridge, Mass., Girton, and other Colleges in England. An interesting account of the rise and progress of Women's Education is given in a current number of *Harper*, from which, as a proof of the line taken by public opinion on this question, it may suffice to quote the statement that, of the twenty-four Colleges of the Republic, founded in or before 1800, none were open to women, while of the seventy-five founded between 1861 and 1870, more than four-fifths are open to both sexes. The late meeting of the members of the University of Toronto gave a unanimous assent to the need of co-education.

The *Bystander* for November contains some excellent criticisms on the capability of women for Higher Education. But this is marred, in our opinion, by the distinction drawn between Education and Co-Education. The latter, it is urged, need not follow from the admission of the former. But Mr. Goldwin Smith is only too well aware, as a friend to Education, of the scanty funds now at the disposal of the Province of Ontario for educational purposes. If women are to receive Educational advantages from our National University, it must be in the Lecture room, Library, and Museum, used in common with them by young men. For none other can be had, and, as the poet has said:

> What's impossible can't be,
> And never, never comes to pass.

The University buildings might be used for the purpose until the present Upper Canada College was made available—a use of that Institution which would give it a usefulness generally thought to be lacking under present circumstances. The High Schools throughout the Province now do the work which formerly was claimed as the exclusive province of Upper Canada College, as a college for ladies in connection with the University of Toronto.

We are the more anxious to press this suggestion, because no better staff could be found for the proposed "National Ladies' College of Canada" than the existing staff of the Upper Canada College, no more valuable president of such an institution than Mr. Cockburn.

As to the assertion made in the *Bystander* that Morality would suffer by the free intercourse of the sexes, brought about by co-education, we hold that such an argument is unworthy of a liberal thinker. Such a result in the few cases where it occurred would no more condemn co-education as inimical to public utility than the increase of vice produced would forbid the enlistment of an army, or the establishment of a factory. But that vice would, even in isolated cases, result from the freest admission of women to College, we utterly disbelieve. The same cry was raised when co-education of boys and girls was first proposed. And with greater plausibility, as temptation would be less resisted by the inexperience of early youth than by trained and matured character. It is the cry of reactionary ecclesiasticism, of social Philistines, and of all those prejudices which instinctively array themselves against progress. The opponents of co-education represent the Oriental traditions of the Subjection of Women, and the idea that female virtue requires a lock and key. They put hard work upon their stock-in-trade sarcasms, about "unsexed girls, with short hair, smoking in our streets." Such monstrosities we believe to be more likely to result from existing educational notions founded on the fallacy of woman's incompetence to feel and know all that is possible to know. For woman we desiderate an education which shall enable her, in the noble words of one of Huxley's Lay Sermons, to make that little corner of the universe in which she finds herself the better for her presence; for woman is a factor equal to man for the future of our race, and if a perfect result is to be hoped for, both factors should have perfect conditions.

We believe the true view of the situation, and that which will ultimately prevail, is the view taken by the undergraduates of Toronto. The refusal of accommodation to those gentlemen for their meeting we hold to be no proof of good sense or good temper on the part of the University authorities. As to the "danger to morality" cry, so awful to old women of both sexes, we hold morality to be safer and nobler under a system of confidence than under a system of restriction. We hold it a safer and nobler morality if men and women look on each other as companions and co-workers than as mere toys charged with dynamite passions sure to explode at the slightest contact.

HIGH SCHOOLS *VERSUS* COLLEGIATE INSTITUTES.

Mr. Dickson, Principal of the Hamilton Collegiate Institute, is not pleased with the article which appeared in the October number of the JOURNAL, concerning High Schools and Collegiate Institutes. He has written to the *Hamilton Times*, attributing "motives" as reasons for the reference made to the Hamilton Collegiate Institute. It seems hardly necessary to state that our article was written to expose a shameless and persistent attempt on the part of the Principals of certain Collegiate Institutes to injure other Institutes and High Schools, by a system of advertising, characterized recently in a leading American educational journal as "beneath the dignity of a Yankee pedler." In doing so, we were acting in harmony with some of the leading newspapers of Ontario, and motives might as fairly be imputed to the proprietors of these papers as to the publishers of the CANADA SCHOOL JOURNAL.

In writing the article, two aims were kept in view: first, to do justice to the other Collegiate Institutes and High Schools; second, to prevent the misleading of earnest students, many of whom have in the past been led to incur the expense of leaving home in order to attend some Institute with a "remarkable record," obtained by securing the brightest lights from smaller schools. We held then, and hold now, that young men and women who desire to improve their education, can, as a rule, find as good or better facilities for doing so at one of the High Schools in their own county, than in some larger, but not more thorough institution away from home. Nearly all the High Schools in Ontario are now in good working order, having excellent teachers, and being well supplied with apparatus; and we hold that loyalty to their own county and its institutions, a proper regard to economy, and the desire to make the most rapid and thorough progress in study, should prompt intending students to give the school in their vicinity a fair trial.

We selected the Hamilton Institute as the best illustration of extensive advertising and comparatively small returns, to be found in Ontario. For the largeness of the former and paucity of the latter, we are not responsible. To the head of the Hamilton School System, must be given the praise or censure due. We cheerfully tender him our thanks for providing us with such an excellent illustration of the failure of his "advertising plan," and of the principle of rendering the whole of the Public Schools of a city mere preparatory forms for the High School. We have no word to say against the Public School teachers of Hamilton. On the contrary, we believe them to be intelligent, well-trained, and hard-working men and women.

Mr. Johnston, Principal of the Model School, and some others of his associate teachers, have more than a local reputation. It is certainly not their fault that the ultimate results of their work seem meagre.

It is not inappropriate to print the following "school announcements" in connection with this article.

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Canadian imitations of the above, with additions, have been seen by many of the teachers of Ontario.

THE CENTRAL COMMITTEE.

A period of much interesting work in the building up of our educational system is marked by the history of the Central Committee of Examiners. Provision for the formation of that committee had been expressly made by the Provincial Statutes, and, under the *regime* of Dr. Ryerson as Chief Superintendent, assisted by the Council of Public Instruction, the Committee was formed of Prof. Young, as chairman, and the three High School Inspectors. As a legacy from that *regime*, the present Minister of Education received this Central Committee, to whose numbers he added four Public School Inspectors, in order that the Public as well as the High Schools might be adequately represented. The Committee, so constituted, carried out under direction of Mr. Crooks, the work of unifying the examinations, one of the most important reforms ever made in our school system. They prepared uniform examination questions for first, second and third-class certificates, and for the Entrance and Intermediate Examinations at the High Schools. Mr. Crooks, on appointment to office, found a large number of books awaiting authorization as prizes and library books in the Depository. To make a thorough examination into the merits of these was evidently a work not possible to the Minister of Education in person. It was accordingly entrusted to the Central Committee, and has been efficiently carried out. The County Model Schools were also, under the administration of Mr. Crooks, the work mainly of the Central Committee, four members of which were engaged in organizing the Model Schools in each county, a difficult and important task in which the whole committee took earnest interest. Thus a most efficient means of professional training was put within the reach of every aspirant to the teaching profession, rich and poor, and has been made

one of the most important and popular factors in our school system.

The Teachers' Associations, also, which under the old *regime* could hardly be said to exist otherwise than as a project, were, under Mr. Crooks, matured into the present most successful Teachers' Institutes. In the work of organizing them, the Central Committee have rendered most important voluntary services, but for which it is not too much to say that their present success could not have been secured.

Such has been the work of the Central Committee during what was in fact a transition period between the end of the old system under Dr. Ryerson, aided latterly by the Council of Public Instruction, and the present system under the Minister of Education.

Besides completing the work of unifying the examinations, a most important result has followed the improved and uniform system of examinations inaugurated through the Central Committee. The character of the examinations for Teachers in this province before that plan was introduced, was not only variable but quite unreliable. The Central Committee has carried out a method of examination which has raised the character of the teaching profession, and indirectly influenced the whole system of instruction in High and Public Schools. The character of the work done in the Normal Schools, is another point in which a great change for the better has taken place. Formerly in the only Normal School we had in Ontario, professional training was quite secondary to mere teaching. The utmost number of trained teachers it produced in a year was 150. Under the present system the Normal Schools limit themselves to their proper function, that of professional training, the only students who receive instruction in non-professional subjects being the candidates for first-class certificates. The yearly number of trained teachers sent out by the Normal Schools now averages 600.

Such are the results for which, as an impartial journal representing the teachers of this Province, we consider the gratitude of all interested in education to be due, not only to Mr. Crooks but to the central committee. The methods of examination have been systematized and raised to a high standard. The Model Schools and the Teachers' Associations are in full working order through the Province, completing a system of education second as we believe to none and superior to most others. For the due completion of these important changes it was necessary that the same hands should carry on the work from first to last. Any change in the *personelle* of the Central Committee would have disturbed the crystalizing process. But what was essentially a period of transition has now come to its natural close. It is very advisible now that the examination system is thoroughly organized by the labours of the Central Committee, to give the system the benefit of a rotation of examiners. By this it is obvious that freshness or variety of treatment in the mode of examination can alone be secured. Rotation of examiners is the method employed by all the best authorities, including the old Universities of Oxford, Cambridge, and Dublin, as also the Public School Boards of England. The Committee may justly feel that it has done its duty well. It has had to traverse ground, to discuss questions, and to disturb vested interests, which necessarily caused friction and criticism. But under the direction of the Minister of Education it has carried a difficult work of educational transition through a critical period, and whenever a very important part of the history of his Province comes to be written—the history of education—the zeal, tact, and practical success of the Central Committee will, we believe, shew that body to merit the gratitude of the Minister, the teaching profession, and the public.

THE CASE OF "BOMBASTES" AGAINST CANADA.

The Montreal *Spectator* of November 13th contains a letter from Rev. R. W. Norman, M.A., Oxford, criticizing, with what is no doubt meant to be crushing severity, an article in the *Spectator*, which claimed that "in High School appointments, *other qualifications being equal*, the preference should be given to Canadian graduates." Mr. Norman "begs leave to hold exactly the opposite view." Yet his only reason for objecting to what Canadians may surely be pardoned in supposing to be their just right, appears to be that "geniality of temperament, sympathy with the young, a high estimate of education as a calling, *might* (the italics are ours) be found *more readily* among University men from the old country than among Canadian graduates." It is a pity that Rev. R. W. Norman, M.A., of Oxford, gave so modest a list of the good qualities peculiar to University men from the old country. He might at least, judging from his literary performance, have added the art of blowing one's own trumpet, and exalting one's own dignity by throwing mud at "Canadian graduates." Dr. Stephenson has a letter in the same issue of the *Spectator*, in which he declines to deal with the charges in the *Spectator*, on the ground that they are anonymous. Rev. Mr. Norman, M.A., Oxford, also makes much ado about the fact of the anonymity of the *Spectator's* criticisms of High School matters in Montreal. But as the editor of that paper justly says, "newspaper men are obliged to hide their personality under a pseudonym." That is perfectly true, and neither Mr. Stephenson nor Mr. Norman furnish any reply to the charge of want of discipline and magnetism in the school in question. Mr. Norman calls very hard names at the *Spectator* critic, "anonymous detractor," "impertinence," "scribble," "contemptible cowardice," &c., &c. Such are a few of his flowers of rhetoric. The *Spectator* is a live paper, and we affectionately hope that it will survive Dr. Norman's homily, which seems to us less indicative of the "good sense," "geniality," &c., &c., in which Dr. Norman says Oxford men so much excel mere "Canadian graduates," as of the eloquence peculiar to another old country institution known as Billingsgate. Meantime, the condition of the schools in question should be dispassionately ascertained, and Dr. Stephenson would be better served by a full investigation by impartial authorities, than by his friend Dr. Norman's tirade, which proves nothing, and suggests the story of the advocate who could only defend a bad cause by abusing the plaintiff's lawyer.

"KEEPING IN."

The moral and physical evil of "keeping in" has been brought before the London School Board, the most important in England, together with the cause which leads, or rather forces, teachers to resort to it against their better judgment, the excessive and indiscriminate use of the "payment by results" system. It needs little reflection to see the evil of "keeping in"—the strain on the nervous system both of teacher and scholar, the conversion of the school into a hateful prison, the promotion of truantism, the ill-feeling sure to result between parents and teacher. But "keeping in" is the natural result when every scholar who fails to pass the examination represents a loss of nine shillings to the school grant, a loss sure to affect the teacher's pocket, and worse, his reputation. A horrible illustration of this is given in the following, which we extract from the *Schoolmaster*:

"*I declare positively that when one of my backward boys died of bronchitis a few weeks back, I felt a measure of relief, for his death would make one 'failure' the less.*"

THE SCHOOL BY LAW INVIOLABLE.

An esteemed correspondent sends us the following:

"In spite of all the salutary advice given to ratepayers about disturbing a public school while under its authority, the practice still grows common. In the Township of Draper a teacher often resorted to the mild punishment of detaining scholars after hours. His school was interrupted by a man holding the titles J.P., Trustee, etc.; but these titles could not save him. He was summoned before the Stipendiary Magistrate in Bracebridge, accused of coming into the school at 4.30 p.m., and taking away one of the delinquent pupils, and was made to pay a fine of $3 and costs."

We do not approve of "keeping in;" but as this matter is left at the teacher's discretion, the school trustee in question was clearly in the wrong. The school hours are the property of the nation. For any man, whatever his social position, to appropriate a part of them by interfering with the teacher in his work, is a gross invasion of the people's rights, which is punishable by law. It would be well if a trustee convicted before any court of a violation of law in school matters, should then and there vacate his office.

CANADIAN ART.

We cannot but regret the degrading effect likely to be produced by the class of cheap illustrated papers known as "comic," with a dismal misapplication of that much-abused phrase. It is not only the degraded literary type of the Jack Harkaway and Dime Burglar class of juvenile literature, of which we wrote in our November issue, but it is the ugly, fatuous, leering grimness of the illustrations. Surely it were wise to furnish our school-rooms with a few cheap statuettes and outline drawings representing the higher ideal of art. In the above we distinctly exempt the *Illustrated Canadian* and *Grip*. The former ought to be taken in by every public school; and if the same thing were done with our comic contemporary, the scholars would have the advantage of a most amusing comment on current events, and wit which is always pure and never irreligious or malicious, and a type of art of which the country has reason to be proud.

—The article on Education, by Oscar Browning, in the current edition of the *Encylopædia Britannica* is well worth reading. Compared with preceding articles on the same subject, particularly with the elder Mill's celebrated essay which held its ground through several of the earlier editions, it serves to show the progress which has been made towards realizing the theories and even the dreams of educational reformers; while in some respects the author's own views are in advance, if not of modern thought, yet certainly of modern *fact*. The conclusion which he reaches is, "that in spite of the great advances which have been made of late years, the science of education is still far in advance of the art. Schoolmasters are still spending their best energies in teaching subjects which have been universally condemned by educational reformers for the past two hundred years. The education of every public school is a farrago of rules, principles and customs derived from every age of teaching, from the most modern to the most remote. It is plain that the science and art of teaching will never be established on a firm basis until it is organized on the model of the sister art of medicine. We must pursue the patient methods of induction by which other sciences have reached the stature of maturity; we must reach some means of registering and tabulating results; we must write a phraseology and nomenclature which will enable results to be accurately recorded; we must place education in its proper place among the sciences of observation. A philosopher who should succeed in doing this would be venerated by future ages as the creator of the art of teaching." This, though obviously an extreme putting of the case, nevertheless furnishes food for thought. The article is valuable for its epitome of the literature of education. The author affirms that Henry Barnard's *Journal of Education* (25 vols.) is by far the most valuable work in our language on the history of education.

—The *Contemporary* has a good article written from the British tradesman's point of view, which complains that no complete knowledge of a trade is attainable, in consequence of the decay of the old apprentice system, and the specializing of every department of each trade in consequence of the division of labor caused by extended use of machinery. The British tradesmen are superseded by "foreigners," especially Americans. He looks for a remedy in the introduction of drawing and industrial training in the Public Schools. Just the policy urged in the Education Department by the last CANADA SCHOOL JOURNAL. A curious, and not very creditable fact connected with the *Contemporary's* article, is that it seems to have been in great part borrowed or taken, "'convey' the wise it call," by the writer of an article, "Education is a Hindrance to Manual Occupation," in the *Popular Science Monthly*. That respectable journal need not, surely, illustrate the popular view of evolution, by adopting the predatory habits of some of the lower animals!

—The Montreal *Spectator* of Nov. 6 endorses Mr. Goldwin Smith's criticism in the current *Bystander*, on the Undue Multiplication of Universities in Ontario, which has now six degree

granting Universities for two million inhabitants. It is only too plain that the present System is attended with the maximum of expense in getting degrees, and a minimum of value to degrees when got. The *laissez aller* "fly on the wheel" system will not do in the higher, any more than in the lower branches of our Educational System. If compulsory education is the duty of the State, it is also the duty of the State to withdraw grants to Denominational Colleges, and to ensure uniformity of value to degrees, by centralizing the degree-giving power.

—The London *Times*, commenting upon the prosecution of Dr. Buchanan in Philadelphia for forging Medical diplomas, says that "our ancient universities have sinned quite as much as he in making degrees a mere matter of money. Many thousands of men add M.A., D.D., or D.C.L. to their names without having answered a question, or shown any scholarship or knowledge over and above what is implied in a B.A. degree."

Contributions and Correspondence.

THE CIVILIZING INFLUENCE OF SCHOOLS.

BY DAVID ALLISON, LL.D.

The dissemination of education among the masses of our population, briefly referred to by me in a previous paper, raises many interesting questions besides that there considered. Professor Seely, in one of his Suggestive Essays, clearly points out that with the expansion of the area of education must come an intensification of its influence. This is more strikingly true in the Old World than in the New, but it is true as respects all countries. Education spreads by extending its influence to the neglected, the distant, the hitherto inaccessible. Operating on the rude and impressible material thus brought within its reach, its work is revolutionary, and its results are often more obvious than where it simply continues a cultivation which has become the settled and hereditary order of things. Any advantege, however, likely to accrue from this view of the case to our Free School system when compared with other systems, is in my opinion more than counterbalanced by the temptation offered to make unfair demands of that system. I listened not long since on a public occasion to an address by one of our most distinguished educationists, out of which has grown the chief thought of this paper. The address was stirring, and its tone excellent. Spoken in the hearing of many engaged in the teaching profession, it rang out clearly truths and counsels admirably adapted to inspire and guide sincere and earnest teachers. The accomplished speaker dwelt strongly on the refining influences of education itself, and on the specific duty of the teacher to make his school-room a nursery not only of "book-learning" but of all that is proper in conduct and graceful in demeanor. I cannot call in question the fact asserted, that the pupils of our public schools are in some instances boisterous and ill-mannered, but I cannot admit that we have here presented a "defect" of our *system* of education. No system can guarantee exemption from the radical defects of human nature. Particular teachers may fail in either precept or example, or in both, to properly mould the habits of their pupils. This is as possible and probable under one system as another. But it should be borne in mind that our public schools are not primarily responsible for the rudeness which sometimes brings discredit upon them. They are solving the problem of national education. It is not their "defect," but their glory that they have in part to deal with representatives of classes possessed of but a limited degree of refinement. That which the home has failed to give, the school is expected to supply. The teacher must stand *in loco parentis* in a special sense. I believe that a proper induction of facts, a generalization, taking into reasonable account the difficulties of the case, would accord to our schools credit, not less for their humanizing than for their strictly educational results. That they do not reach and remedy all the evils and infirmities of human nature, that, through inherited tendencies, or in the free play of volition, some who frequent them are models neither of morals nor manners, is entirely too narrow a basis on which to predicate their failure. The style of reasoning adopted by Richard Grant White in his severe arraignment of the Public School System of the United States, might be employed to discredit the institutions of Christianity itself. As I have said, no system can get back of the depths of human nature. That is the best system which reduces evil to a minimum by securing a maximum of substantial good, of positive progress.

THE TEACHER'S RENEWAL OF STRENGTH.

BY THE REV. CHARLES PELHAM MULVANY, M.A.

When the hero of Goethe's great poem, sated with the worldly pleasures lavished upon him by the evil spirit whom he had chosen to be his ministrant, demanded access to a higher and purer ideal, that of Homer's loftiest conception, the Argive Helen; then the powers of Mephistopheles availed not to do his bidding, "Of that Hades he held not the key." Faust was obliged to rely on *his own* powers of will to conjure up the phantasma of Helen, through whom the purification of his nature was to be effected.

This, like much else in that powerful but extraordinary work, the second part of Faust, has an esoteric and mystical meaning. There are tasks, those that relate to the purification and ennobling of the soul, which we must accomplish for ourselves. No sorcery from without, no magic of system, method, lectures, colleges, can supply the place of that which must be done within the sanctuary of the soul, which can be done there alone.

In one of the most charming of that series of *bijou* biographies edited by Mr. Morley, that of Sir Walter Scott, it is remarked that all that Scott poured forth so lavishly in poetry and fiction was but the assimilated and transmuted outcome of the rich stores of observation carried on for years of communion with man and nature. Hence the wonderful fidelity of his Scottish characters; hence the pre-Raphaelite minuteness of his descriptions of scenery, so well and justly praised by Ruskin.

If it be true that the evolution of *functions* follows the law of evolution of *organs*, we may expect to throw some light on the processes of intellectual vitality by considering them under the formula which describes vital action in general as *the continual adaptation of organisms to surrounding conditions*. Healthy intellectual utility must be adapted to its actual conditions. The intellectual life of a monk in his cell spending half a century in carving a crucifix or colouring a missal, is a free and healthy vitality. Intellectual life should not act and react on those with whom it is in contact. Again, we find in intellectual vital action, as in organic vital action, a two-fold process, of *synthesis* as of *analysis*. By synthetic action, oxygen from the atmosphere, as nutriment from food, is absorbed; by the analytic action these are distributed to the several organs, adapted with infinite difference of form and action to each.

The work of the teacher is an organic form of the intellectual and social life. This is plain, because without the function of the

teacher, intellectual and social progress would have been, would now be, impossible. Being organic, it must consist of an equally balanced action of these two processes. Synthesis or assimilation, and analysis or distribution. The balance of these two vital processes is seen in the simplest forms of animal life—those protozoa that consist but of a single cell. The cell absorbs nourishment from the fluid in which it floats; it repays it by developing another cell within itself to increase the amount of vitalized existence.

1. The Synthetic Process. Let the teacher remember that, like Sir Walter Scott, he can only give out what he has himself assimilated. His mind must continually be fed. Routine will not do. He is not a priest, whose duties can be fulfilled with a daily round of ceremonies and rubrics. His office is not a survival of dead formulas from a past that *once* was living, but an actual vital action. What he reads must be capable of being *assimilated with ease.* The process should be a *pleasurable* one. This presupposes that he takes pleasure in his vocation as a teacher. Food that is not easily and comfortably digested gives little nourishment. Nor should it be all or in great part in direct relation to the subjects of yesterday's or to-morrow's teaching. A monotonous diet is unwholesome. Majendie the physiologist found that by feeding a dog for weeks on the same food the animal became starved. There is hardly any subject of study, in history, philosophy, industrial research, biography, or even poetry or fiction, which may not be brought in to illustrate or embellish some part of the daily teaching. Is it not in the power of the competent teacher to forestall the great revolution in our teaching methods by which increased importance will be assigned to the study of science? Now very little of this is attempted. How very much might be done with a little effort, a little interest on the teacher's part in the duty of leading every one of his scholars to know something about that corner of the universe in which he finds himself! Elementary books on all scientific subjects abound, many of them written in a most nervous and fascinating style. A half hour of such studies twice a week, illustrated by object lessons, or perhaps experiments—what a welcome break and relief would this be to the routine of book and slate. And so with all else that the teacher's mind can assimilate, provided it be of a kind not wholly alien to his duties in the school-room. It is not in every teacher's power to possess at all times the magnetism of a strong will. Headaches and overstrained nerves will at times assert themselves, but it is always in the teacher's power to possess that which is, even with the dullest and most wilful, *sure* to be both *recognized* and *respected*—the possession of knowledge. And the more freshly this is taken into the mind, the more it will be felt in the daily lessons. Dr. Arnold used to prepare anew the lesson in Thucydides which he had gone over hundreds of times. "I always like my pupils to drink from a fresh stream," was the characteristic saying of the great teacher.

(To be continued.)

THE USE AND ABUSE OF HISTORY. *

BY A. STEVENSON, WELLAND HIGH SCHOOL.

Were I to ask to-day the teachers of Ontario the object of studying history, half of them would probably remain speechless, and nine-tenths of the remainder would tell me that it is to gain a knowledge of facts. Yes, "facts," but what is the use of facts? It is a fact that neighbor Brown traded dogs with neighbor Jones yesterday, but who cares a pin for that? It is an utterly worthless fact. It does not make us wiser or happier or better. Of equal value are many of the facts that crowd our school histories. It matters not though these may be somewhat more interesting than the fact just related. This does not enhance their value; it is no proof of their worth. The importance which some people attach to these facts is not real, but imaginary. This kind of information may be interesting, but yet it has no intrinsic value. Facts are things, and popular excitement or scholastic prejudice may give a fictitious value to the most worthless things. Witness the ancient science of astrology and the modern craze for broken china.

We must, then, ascertain the value of historical facts as we ascertain the value of any other facts, by determining to what actual uses they may be applied. The sole use of an historical fact is seen in its influence on the conduct of those who may become acquainted with it. Will it make them better citizens; more patriotic, more liberal, more useful, more peaceable? If not, it is no good whatever, and it may be a positive evil.

The history of a country is by no means the history of its rulers, their genealogies, foreign wars and court intrigues. More than two centuries ago it was conclusively settled by Cromwell that, in England at least, the king is not the country. But this foolish idea has hardly yet been abandoned by the monarchy-worshipping and blindly prejudiced historians of that country. Knight and Green appear to be almost the only writers who have a well-conceived idea of what a history should be. Most of the others have written merely biographies of the kings, embellished with polished lies, foolish superstitions and silly nothings.

We have before us a "School History of the British Empire," by W. F. Collier, an English writer of some celebrity. In the account given by this author of the reign of George III., we find sixteen pages devoted to the wars with France and with America, wo entire pages being filled with a description of the battle of Waterloo, while a scant page is deemed sufficient to describe the moral, intellectual, and political progress of the nation. The entire account of the establishment of the freedom of the press, the reform in prison management then inaugurated, the origin of Sunday Schools, the introduction of gas-light and the application of steam to navigation, occupies scarcely half a page. A similar glaring defect may be observed anywhere throughout the work.

While a diffuse statement of worthless facts does not constitute history, no more does a bulky compendium of still more worthless dates. We are all acquainted with so-called school histories, in which definite dates are assigned to the most common-place acts of quite ordinary persons. Dates are useful only so far as they are necessary to the proper understanding of important facts. They have been called the tenter hooks upon which the web of history may be sketched. But some historians are all hooks and no web.

Let it be granted that you knew the exact year, the exact day, and the exact minute in which the first bow-string was twanged at the battle of Hastings, and the name and title of the Saxon who threw the first spear at the invader; if you further knew to a man the number of killed, wounded and missing, the precise manner in which Harold was slain, and the exact distance of the sun above the horizon when the wretched islanders turned in flight from their conquerors,—supposing that you knew all this, and in addition, were well informed in regard to the not quite irreproachable parentage of William; now, will you oblige us by stating definitely just which one of these facts assists you in any way to discharge properly your duties as a citizen, or which one induced you to vote for the National Policy at the late elections?

But even were our historians to restrict themselves to the mere relation of important facts, at least of such of them as *are* facts, the information they would impart to us, judged on its own merits, would be of little value. It has been well said that "facts are the

* This paper is published at the request of the Welland County Teachers' Association, before which it was read.

dross of history." We must understand the circumstances which led to an action or the motives which called it forth, and especially the results springing from it, before the statement of the fact itself can be of any real use to us. It is an important fact to know that about a century ago, certain Americans, having assembled in congress in the city of Philadelphia, declared that "these united colonies are, and of right ought to be, free and independent states." Yet it is of infinitely greater importance to know that this resolution was made and carried out because that stubbornly-stupid king, George III., attempted to levy, at the point of the bayonet, an unjust tax on these colonists. Important, because it has shown the common people that they alone possess all power in the nation, if they will only learn how to set to work and use it properly. Important still further, because, taken in connection with the unfortunate accident that befel Charles I., this circumstance may teach kings just how far it would be well for them *not* to go in their impositions on their subjects.

As has already been stated, many teachers have no well-defined idea of the object of teaching history, and it is only too evident that their pupils have no well-defined idea of the use of learning it. And so it comes to be quite freely urged by many sensible people, that the time spent in this study is wasted. It is a deplorable fact that such in reality is generally the case. But if history were written as it should be written, and taught as it should be taught, no subject of study could be of much greater importance. History is philosophy teaching by example; that is, it is a concise description of the moral, social, intellectual, political, and religious condition of a people, and an account of the most important events which have brought about such a condition. And the sole object of studying history is that we in our day may avoid the evils that have resulted in the decline of nations, and that we may follow with steady purpose such courses as have led nations to prosperity. With this end in view, a good historian will treat of the different classes into which a people are divided according to social usages, of the circumstances that originated class distinctions or that destroyed them, of the principal laws by which the people are governed, how these laws came to be made and how they are carried out. He will tell us what changes took place in language and literature, what advancement was made in art and what discovery in science. He will describe not only the great moral and social reforms that have been made, but also the religious beliefs prevailling in the country, and their influence on the character and conduct of the people. When it may be necessary to record a war or a particularly important battle, he will dwell as briefly as possible on the actual circumstances of the contest, but he will relate faithfully and impartially, and as fully as he may, the causes and the results. Civil wars especially will receive his most careful attention. Throughout the whole course of his work he will speak of classes and periods rather than of individuals and definite dates.

The result of studying a history differing materially from this description, as most school histories do, is worse than a mere waste of time—it is a positive evil. Glowing pictures of war and conquest, surrounded, as it were, with the dazzling light of "gunpowder and glory," and descriptions of organized and wholesale robberies and murders as commendable and patriotic acts, are the most powerful inciters to further deeds of violence and of blood. Take up almost any history of England, and you may find narrated there, with every mark of approbation, the villainously unjust wars which the English nation waged against the Scotch and Welsh during the eleventh, twelfth, and thirteenth centuries. Cressy, Poictiers and Agincourt are considered as great and glorious national achievements, while in fact they were nothing less than the murderous attacks of an army of freebooters on an unoffending nation. The insolent and unbearable conduct of Britain towards France and the United States about the beginning of the present century is regarded as highly praiseworthy, though it deluged Europe and America with tears and blood. The merciless and unrighteous wars of expatriation and extermination which have been carried on between the Afghans and Zulus, and other unhappy nations, colonial neighbours of Britain, are spoken of with the highest approval, as the agents of that superior civilization which travels in a powder-cart, under the blood-stained banner of England. And lastly, that most nefarious proceeding known as the Opium War, a war which was waged against China because she had refused to allow the importation of opium, is passed over without the least show of disapprobation.

When we reflect that English historians have written in this strain for centuries, and that English school-teachers have for years been busily engaged in instilling such bloodthirsty ideas into the minds of youthful Britons, we are not at a loss to account for the strong and clamorous war party in England at the present day. We feel sure that, had it not been for the counteracting influence exerted by such men as Gladstone, Bright, Carlyle and Ruskin, England would even now be engaged in one of the most terrible wars that the world has ever witnessed. These historians rarely mention the fact that wars are generally brought on by kings and their ministers to gratify their own intense selfishness by influencing elections or to provide lucrative offices for court or party favorites. An instance just to the point was the late Zulu war. Who is there that doubts that the principal object Disraeli had in view in entering upon this war was that by conquest and annexation he might gain at the approaching elections the vote of the war-loving element of the English people?

And it is quite freely asserted that there are many politicians in the Grant third-term party in the United States who would willingly have plunged their country into a war with Great Britain or Mexico, that by this means they might secure the election of their candidate, who in such a case would probably receive the presidency since he has proved himself a tolerably successful military officer.

Further, our drum and trumpet historians have not said one word of the loss to the country of so many valuable lives, of the shamefully mangled humanity on the battle field or in the hospitals, of the sufferings of the miserable widows and orphans of the soldiers, left a burden on the taxpayers of the country, of the uncounted loss of the public and private property, of the gigantic debt hanging like a millstone on the neck of the nation, or of any other of the thousand and one indescribable evils of war.

In consideration of all these facts, we think that the great work which the teachers of history in our own day should set themselves to do, is the inculcation in their pupils of a spirit of peace and good-will towards their fellow-men. Impress on your pupils the facts that in the description of a struggle with a foreign nation, our historians are likely to be prejudiced and partial, and have indeed shown themselves to be so—that *we* also have our own prejudices which are too commonly without foundation, and that in all fairness we should read both sides of the story before forming an opinion. Show your pupils that for nations to engage in deadly conflict with each other, is no less barbarous than it is for individuals, but indeed infinitely more so. Such a method of teaching history, with due attention to the other essentials which we have mentioned, would make of the student a peaceable, law-abiding, and liberty-loving citizen—an end worth reaching, especially in these troublous and unsettled times.

EDUCATIONAL CONDITION OF IRELAND.

BY J. GEORGE HODGINS, LL.D.

The remarkably disturbed state of Ireland (at least in the west and south) has naturally called public attention, in an unusual degree, to the condition of that country. Its educational state is of especial interest, in view of the organized lawlessness so prevalent in the disturbed districts. So far, appearances indicate that increased intelligence has led to better organization and more embittered feeling.

It will be remembered that it is within the last half century that any systematic effort was made to reach and uplift the masses of the people by the potent means of popular education. In making this effort, English statesmen supposed that with it, in connection with the concession of the principle of the Ulster "tenant right," they had discovered an infallible panacea for allaying, if not curing, the chronic ills of Ireland. In this supposition they have now discovered an unfortunate mistake, and find that the first problem is more difficult of solution than ever.

As to the educational factors which are now combined to promote the great work of uplifting the masses and the nation generally, I may remark that some of the most important of them are of comparatively recent date. They embrace the following: I. The National system of mixed schools; II. The new system of Intermediate Schools; III. The somewhat localized and private schools, comprising: (1) The Royal Free Schools; (2) The Erasmus Smith's Schools; (3) The London Hibernian Society Schools, and (4) The Kildare Place Schools. IV. Universities: (1) Dublin; (2) Queen's, and (3) Catholic; V. Women's Colleges; VI. Professional and Science Schools.

It may be interesting, as a matter of history, to note the periods at which efforts were put forth to extend educational facilities in Ireland.

First of all, due credit must be given to the nondescript "Hedge Schools," which, up to a somewhat recent period, exercised no inconsiderable influence in promoting "book learning" among the rural peasantry. A recent writter, speaking of that inimitable pedagogue, the Hedge Schoolmaster, says: "Fearfully pedantic, woefully undisciplined, panning out terribly upon the classics and mathematics, which he could devour, without the need of going to college, from a few standard, precious and oracular works, bound everlastingly for Keefs, he was the wonder, the admiration, and yet the butt of the neighbourhood. Goldsmith gave only a weak imitation of him. He had words at will, sonorous, but used with charming disregard to their connection. If a country gawk offended him, he thought nothing of assailing him with the charge —'the correlations of your mental obliquity subtend the inordinate sphere of your congenital insubordination.' And when O'Connell squelched the Dublin fish-wife, by calling her 'the sub-duplicated hypotheneuse of an isosceles triangle,' and charged her with keeping in her house that equivocal character, a 'Pneumatic barometer' he was merely quoting a hedge Schoolmaster indigenous to Kerry."

The Royal Free Schools were founded in 1608. Eleven years after, and as feeders to the "College of the Holy and Undivided Trinity, near Dublin," (*Juxta Dublin*) the Erasmus Smith's Schools were founded in 1733, and the London Hibernian Society Schools in 1811. The famous Irish National School system was projected in 1831, by Mr. Stanley—called by O'Connell "Scorpion Stanley—(afterwards Earl of Derby), just fifty years ago. The Kildare Place Schools were soon after established by the Church of England and Ireland, as a protest against these national schools. The Queen's Colleges were projected by Sir Robert Peel in 1845. One of these colleges was established in each of the Provinces of Ireland, viz.: at Belfast in Ulster, at Cork in Munster, and at Galway in Connaught. As Leinster already possessed Trinity College, no other college was established in that province. The chief governing body of these colleges was called the Queen's University; but this body was virtually superseded in 1879 by a provision in the Act for a National University body to be established by Her Majesty by Royal Charter. The "Catholic University" was founded in 1850, under the Presidency of Dr., now Cardinal Newman, who resigned in 1861. An abortive effort, as will be remembered, was made by Mr. Gladstone, a few years ago, to consolidate University Education in Ireland.

While these educational agencies were being extended, the important subject of female education received no attention worthy of the name, until in 1866, when, as part of a comprehensive scheme projected in England, Alexandra College was founded in Ireland, for the purpose of affording a sound systematic education for the upper and middle classes of women after the school period. In addition to this College in Dublin, there is the "Ladies' Institute" in Belfast. In 1869, too, a system of University Examinations was instituted by Trinity College and the Queen's University with marked success. The number of candidates increased from 28 in 1870 to 120 in 1878–9. In addition to these aids for the promotion of education, the Queen's Institute, for technical instruction in Art Industries, was established in Dublin in 1861. Extensive provision was also made in Dublin for giving technical instruction to men, under the direction of the Science and Art Department.

The most important movement, in Ireland, for the promotion of higher education was made in 1878, by the passing of an Act to promote "Intermediate Education." The object of the Act was to institute and carry on a system of public examination of students in the ancient language and literature of Greece and Rome, the language and literature of Great Britain, Ireland, France, Germany, Italy; Mathematics, the Natural Sciences, Music and Drawing, etc. This scheme has largely superseded, so far as women are concerned, the University examination plan of 1869, and a large falling off was observable in 1879. The data as to results of these later schemes are not yet sufficient to do more than indicate a reasonable success in the future.

As to the progress of the National Schools—the schools of the masses of the people—it is alleged that there is a falling off, of late years, in the results of the schools themselves, as well as in the zeal of their promoters. In 1878, there were 7,552 schools in operation, with a daily average attendance of 435,054 children, or a decrease in the average attendance of 1878 of nearly 3,000 pupils. The character of the schools may be indicated by the status of the teachers employed. Of the 11,842 classified or certificated teachers, 7,329 were third-class, 3,460 second-class, and only 1,053, or about one in ten, first-class. This state of things contrasts favorably with that of Ontario, where the proportionate number of third-class teachers employed is in excess of that employed in Ireland. Besides, in Ireland, there were in addition nearly 4,000 assistant teachers, including 260 "work-mistresses" employed—a class of teachers almost wholly unknown in Ontario.

One of the most significant facts mentioned in the report of 1879 is that which indicates the decadence of the system. This is the systematic falling off since 1876 of the local rates for the support of the National Schools. In 1876, these local rates amounted to $152,300; in 1879 they only reached the sum of $94,000. In addition to this remarkable apathy, the Commissioners add: "We have to express our regret and disappointment at the apathy exhibited by the managers of National Schools—not availing themselves of the facilities afforded by law for providing suitable dwellings for teachers—there being now only one residence for every tenth teacher employed.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

ALGEBRAIC EXERCISES.

[SELECTED.]

I.

Examples such as the following afford possibly the best elementary exercise that has yet been devised for cultivating facility in manipulating algebraic expressions.

1. If $s=a+b+c+d$, then

$$\frac{s-a}{a}+\frac{s-b}{b}+\frac{s-c}{c}+\frac{s-d}{d}=\left\{\frac{1}{a}+\frac{1}{b}+\frac{1}{c}+\frac{1}{d}\right\}s-4.$$

2. If $s=a+b+c+d+\ldots\ldots$ to n terms, then

$$\frac{s-a}{s}+\frac{s-b}{s}+\ldots\ldots=n-1.$$

3. If $a^2=y+z$, $b^2=z+x$, $c^2=x+y$, and $2s=a+b+c$, then
$$s(s-a)(s-b)(s-c)=4(xy+yz+zx).$$

4. If $2a=y+z$, $2b=z+x$, $2c=x+y$, then
$$a^4+b^4+c^4-2b^2c^2-2c^2a^2-2a^2b^2=-(x+y+z)xyz;\text{ and}$$
$$(x+y+z)(xy+yz+zx)-xyz=8abc.$$

5. If $x^2-yz=a^2$, $y^2-zx=b^2$, $z^2-xy=c^2$, then
$$\frac{a^2x+b^2y+c^2z}{x+y+z}=x^2+y^2+z^2-xy-yz-zx=a^2+b^2+c^2.$$

6. If $x=\frac{b-c}{a}$, $y=\frac{c-a}{b}$, $z=\frac{a-b}{c}$; then $xyz+x+y+z=0$.

7. If $y+z+u=ax$, $z+u+x=by$, $u+x+y=cz$, $x+y+z=du$,
then $\frac{1}{a+1}+\frac{1}{b+1}+\frac{1}{c+1}+\frac{1}{d+1}=1.$

8. If $a=\frac{x-y}{x+y}$, $b=\frac{y-z}{y+z}$, $c=\frac{z-x}{z+x}$, then
$$\frac{1+a}{1-1}\cdot\frac{1+b}{1-b}\cdot\frac{1+c}{1-c}=1.$$

9. If $2s=a+b+c$, then
$$(s-a)^2+(s-b)^2+(s-c)^2+s^2=a^2+b^2+c^2.$$

10. If $2s=a+b+c$, then
$$2(s-a)(s-b)+2(s-b)(s-c)+2(s-c)(s-a)=2s^2-a^2-b^2-c^2.$$

11. If $\frac{a}{x}(b-c)+\frac{b}{y}(c-a)+\frac{c}{z}(a-b)=0$; shew that
$$\frac{x}{a}(z-y)+\frac{y}{b}(x-z)+\frac{z}{c}(y-x)=0.$$

12. If $2s=a+b+c$, then shall
$$\frac{1}{s-a}+\frac{1}{s-b}+\frac{1}{s-c}+\frac{1}{s}=\frac{abc}{s(s-a)(s-b)(s-c)}.$$

13. If $\frac{b^2+c^2-a^2}{2bc}+\frac{c^2+a^2-b^2}{2ac}+\frac{a^2+b^2-c^2}{2ab}=1,$
then shall
$$(a+b-c)(b+c-a)(c+a-b)=0.$$

14. If $s=a+b+c$, shew that
$$s(s-2b)(s-2c)+s(s-2c)(s-2a)+s(s-2a)(s-2b)-(s-2a)(s-2b)(s-2c)=8abc.$$

15. If $x+y=p$, and $xy=q$, then
$$x^2+y^2=p^2-2q,$$
$$x^3+y^3=p^3-3pq,$$
$$x^4+y^4=p^4-4p^2q+2q^2$$
$$x^5+y^5=p^5-5p^3q+pq^2.$$

16. If $a^2+b^2=c^2$, then shall
$$(a+b+c)(a+b-c)(a+c-b)(b+c-a)=4a^2b^2.$$

17. If $\frac{a^2+bc}{a^2-bc}+\frac{b^2+ca}{b^2-ca}+\frac{c^2+ab}{c^2-ab}=1$, then shall
$$\frac{a^2}{b^2+c^2-a^2}+\frac{b^2}{a^2+c^2-b^2}+\frac{c^2}{a^2+b^2-c}=-\frac{3}{2}.$$

18. If $(a^2-bc)(b^2-ca)(c^2-ab)=0$, then shall
$$\frac{1}{a^3}+\frac{1}{b^3}+\frac{1}{c^3}=\frac{a^3+b^3+c^3}{a^2b^2c^2}.$$

19. If $xyz=1$, then
$$(1+x+y^{-1})^{-1}+(1+y+z^{-1})^{-1}+(1+z+x^{-1})^{-1}=1.$$

20. If $a=(b+c)x$, $b=(c+a)y$, $c=(a+b)z$, then
$$1-xy-yz-zx-2xyz=0.$$

We delayed the solution of 6, (2), of the October number that we might give some kindred problems with their solutions. We first give the problem referred to.

I. Let $S=\frac{1}{a}-\frac{1}{ab}+\frac{1}{abc}-\ldots\ldots$

$$=\frac{1}{a}-\frac{1}{a}\left[\frac{1}{b}-\frac{1}{b}\left\{\frac{1}{c}-\frac{1}{c}\left(\frac{1}{d}-\ldots\ldots\right.\right.\right.$$

$$=\frac{1}{a}-\frac{1}{a}\cdot k,\text{ say.}$$

$$=\frac{1}{a}{\Big/}\frac{1-k}{}$$

$$=\frac{1}{a+\dfrac{a}{\frac{1}{k}-1}}$$

Where $k=\frac{1}{b}-\frac{1}{b}\cdot l$, say

$$=\frac{1}{b+\dfrac{b}{\frac{1}{l}-1}}$$

$$\therefore\ \frac{1}{k}=b+\frac{b}{\frac{1}{l}-1}$$

whence $S=\dfrac{1}{a+\dfrac{a}{b-1}+\dfrac{b}{c-1}+\ldots\ldots}$

Now $e^{-1}=\frac{1}{2}-\frac{1}{2.3}+\frac{1}{2.3.4}-\ldots$

$$\therefore\ e^{-1}=\frac{1}{2+\frac{2}{2}+\frac{3}{3}+\ldots\ldots}$$

or $e=2+\dfrac{2}{2+}\dfrac{3}{3+}\ldots$

Again,

II. If $S=\frac{1}{a}+\frac{1}{ab}+\frac{1}{abc}+\ldots\ldots=\frac{1}{a}+\frac{1}{a}.k$, say

$$=\frac{1}{\frac{a}{1+k}}=\frac{1}{a-\frac{ak}{1+k}}$$

$$=\frac{1}{a-\dfrac{a}{1+\frac{1}{k}}}.$$

Similarly $\frac{1}{k}=b-\dfrac{b}{1+\frac{1}{l}}$, &c.

$$\therefore S = \cfrac{1}{a - \cfrac{a}{1+b} - \cfrac{b}{1-c} - \ldots}$$

Now $e-1 = \frac{1}{1} + \frac{1}{1.2} + \ldots$

$$\therefore e-1 = \cfrac{1}{1 - \cfrac{1}{3} - \cfrac{2}{4} - \cfrac{3}{5} - \ldots}, \text{ or } \frac{1}{e-1} = 1 - \frac{1}{3-} \frac{2}{4-} \frac{3}{5-} \ldots$$

Also $e-2 = \frac{1}{2} + \frac{1}{2.3} + \ldots$

$$\therefore e-2 = \cfrac{1}{2 - \cfrac{2}{4} - \cfrac{3}{5} - \ldots}$$

$$\text{or } \frac{1}{e-2} = 2 - \frac{2}{4-} \frac{3}{5-} \frac{4}{6-} \ldots$$

III. Let $S = 1 - \frac{1}{a} + \frac{1}{ab} - \frac{1}{abc} + \ldots$

$$= 1 - \frac{1}{a}\left\{1 - \frac{1}{b}\right(1 - \ldots$$

$$= 1 - \frac{1}{a} \cdot k, \text{ say}$$

$$= \cfrac{1}{1 - \cfrac{1}{1 - \cfrac{a}{k}}}, \text{ so also } \frac{1}{k} = 1 - \cfrac{1}{1 - \cfrac{b}{l}}, \text{ &c.}$$

$$\therefore S = \cfrac{1}{1 - \cfrac{1}{1-a} + \cfrac{a}{1-b} + \cfrac{b}{1-c} + \ldots}$$

Now $e^{-1} = 1 - \frac{1}{1} + \frac{1}{1 \cdot 2} - \ldots$

$$\therefore e = 1 - \cfrac{1}{1-1} + \cfrac{1}{-1} + \cfrac{2}{-2} + \ldots$$

$$\text{or } \frac{1}{1-e} = \frac{1}{-1+} \frac{2}{-2+} \frac{3}{-3+} \ldots$$

Several other curious results may be obtained by following kindred methods.

SOLUTIONS.

M. Bickell, Clyde, forwards the following solutions of problems in the October and November numbers:

October—I. The average price of animals is \$1; ∴ he pays \$1 more than the average price on $\frac{1}{3}$ of a sheep, and \$1 less than the average price on 2 lambs and on $1\frac{1}{3}$ kids, hence we have the combination—

$\left.\begin{matrix} \frac{1}{3} \text{ sheep and } 2 \text{ lambs} \\ \text{and } \frac{1}{3} \quad " \quad " \quad 1\frac{1}{3} \text{ kids} \end{matrix}\right\}$ or, $\begin{matrix} 1 \text{ sheep and } 6 \text{ lambs} \\ 1 \quad " \quad " \quad 4 \text{ kids.} \end{matrix}$

And this to answer the conditions must be 3 sheep, 15 lambs and 2 kids.

III. Complete the cone which will be $8\frac{1}{3}$ in. high. Then the contents of comp. cone

$$= \left(\frac{5}{4}\right)^2 \times \frac{355}{113} \times 8\tfrac{1}{3} \times \tfrac{1}{3} = 13{\cdot}69 + \text{cub. in.}$$

and contents of upper part is

$$\left(\frac{1}{2}\right)^2 \times \frac{355}{113} \times 3\tfrac{1}{3} \times \tfrac{1}{3} = \quad {\cdot}87 + \text{cub. in.}$$

∴ contents of frustrum=the difference=12·82...cub. in.

Oct. IV. $x^2+y^2=13$ (I)

$(x+y)(x^2-xy+y^2=35$ (II)

Sub. I. in II. $(x+y)(13-xy)=35$ (III)

III. $\div 13-xy, x+y=\frac{35}{13-xy}$ (IV.

Sq. IV. $(x+y)^2=\frac{1225}{169-26xy+x^2y^2}$ (V)

Trans. V. $2xy=\frac{1225}{169-26xy+x^2y^2}$ (VI)

Clear of Frac. and Trans. $2x^3y^3-39x^2y^2+972=0$ (VII)

Factoring $(xy-6)(xy-18)(2xy+9)=0$ (VIII)

$\therefore xy=$ 6, 18 or $-4\frac{1}{2}$ (IX)

IX. $\times 2$ $2xy=12$, 36 or $-$ 9 (X)

I.+X. $=x^2+2xy+y^2=(x+y)^2=25$, 49 or 4 (XI)

I.−X. $=x^2-2xy+y^2=(x-y)^2=$ 1, −23 or 22 (XII)

$\sqrt{\text{XI.}}$ $x+y=\pm 5, \pm 7 \pm 2$ (XIII)

$\sqrt{\text{XII.}}$ $x-y=\pm 1 \pm \sqrt{-23}, \pm\sqrt{22}$ (XIV)

Add XIII. & XIV. $x=+3, -\frac{1}{2}(7+\sqrt{-23})+\frac{1}{2}(2+\sqrt{22})$

Sub. do. do. $y=+2, -\frac{1}{2}(7-\sqrt{-23})+\frac{1}{2}(2-\sqrt{22}$

Nov. I. A has 200, B 200, and C 200 at the close of Last Game.

	c.	c.	c.		
A wins	" 100,	" 250,	" 250	" "	Second "
B wins	" $162\frac{1}{2}$,	" 125,	" $312\frac{1}{2}$	" "	First "
C wins	" $240\frac{5}{8}$,	" $203\frac{1}{8}$,	" $156\frac{1}{4}$	at Beginning.	

Assuming the play for equal stakes, though not the same stakes every game.

Nov. III. The lot is 15 rods long by 9 wide.

Let x=width of path,

Then $(9-x)(15-x)=\frac{3}{4}$ of 135.

Whence $x=1\frac{1}{2}$ rods.

I., Nov., was also solved correctly by F. S. Maclennan, of Kirk Hill, and by Lucille A. Hoffman, of Port Hope; and

III., Nov., by Lucille A. Hoffman, and by Neil Morrison, of Guthrie.

SOLUTIONS ASKED FOR.

1. A has a farm worth \$15,000, which decreases $12\frac{1}{2}$ per cent. in value on that of each preceding year. B has a farm worth \$12,000, which decreases in value 10 per cent in the same manner. When can A and B make a fair exchange, farm for farm?

W. Bickell, Clyde.

2. A ladder, 80 feet long, stands upright against a vertical wall, on a horizontal plane. A monkey ascends the ladder at a uniform rate, and at the same time the foot of the ladder slides out horizontally at the same uniform rate, the monkey arriving at the other end at the instant that end reaches the bottom of the wall. Required the distance passed through in space by the monkey.

3. A dog swims from the centre of a circular pond 30 rods in diameter, directly toward a duck that is swimming around the pond at the outer edge, the dog swimming 5 rods while the duck is swimming 4 rods. Required the nature of the curve described by the dog, and the distance he swims to catch the duck.

4. A cone, whose altitude is 30 inches and diameter of its base 12 inches, is pierced by a 3-inch auger parallel to the base, the axis of the auger passing through the axis of the cone 10 inches from the base. Required the volume and surface removed from the cone.

5. Suppose the earth to be a hollow sphere 8,000 miles in diameter, and divided into two equal parts by a plane passing through the equator. Suppose also that two bodies start from the same point at the same time on the equator, the first moving on the

concave surface N. 80° W., and the second moving on the plane keeping directly under the first. How far will each have moved when the first arrives at the pole?

6. I observed a vine had taken hold of a tree at the base, and once in 5 feet had regularly wound around it in a spiral manner to the top. The tree was a perfect cone, its perpendicular height 100 feet, and the diameter t the base 4 feet; while the diameter of the vine at the base of the tree was 2 inches, running evenly to a point at the top. Required the length of the centre of the vine.

7. How many routes are there between two diagonally opposite corners of a cube, that consists of 1000 small cubes, each an inch square, the routes being supposed to be exactly 30 inches long, all different in some respects, and all running along the edges of the cubes?

8. A farmer has an elliptical pasture whose major axis is 20 rods and minor axis 15 rods, surrounded by a wall. What length of rope affixed to the outside of the wall directly against the extremity of the major axis, that will allow a horse just liberty to graze over one acre outside the ellipse?

9. A rectangular field, 40 rods in length and 30 in breadth, is enclosed by a wall, the longest way of the field running east and west. From the south-west corner of the field a dog starts to catch a rabbit that is feeding in the south-east corner, while the rabbit starts at the same instant and runs close to the wall to the north east corner, thence close to the wall to the north-west corner, where she is caught by the dog just as she is going through a hole in the corner of the wall. Required the distance run by the dog, he having directed his course all the while directly towards the rabbit.

10. A man walks 5 miles an hour in the direction of his shadow on a level plane, from noon to sunset, in lat. 43° 30′ N., the sun's dec. being 22° N. What curve does he describe, and in what direction, and at what distance from his starting point will he be at sunset, the earth being considered a perfect globe 8000 miles in diameter?

R. H. Cooper, Dixon, Ill.

(Complete solutions with numerical results of the preceding nine are asked for.)

TO CORRESPONDENTS.

G. A. P., Lucknow. In 3, of October number, you find what you call the mean area by taking the square root of the sum of the areas of the ends, and proceed to find volume by multiplying the mean of these areas by 5,—a very incorrect way of finding the volume. In 2, you have lettered your figure improperly, and so found the length of the wrong lines. You must try again, though your efforts are creditable to one so young.

C. P., Antigonish, N.S. In your demonstration you say, "Because in the triangles MNF, NFG, MF is equal to NG and MN to FG (the parallelogram is $MFGN$) and the angles NMF, NGF equal, therefore MG is equal to NF,"—a very improper conclusion; the reasoning shews that any parallelogram has its two diagonals equal. In your accompanying note you say "some of the solutions were objectionable, and some unsatisfactory by reason of the unscientific nature of the argument." Your statements would be more likely to receive attention if you pointed out in what respect the solutions were objectionable and unsatisfactory, and in what the want of scientific method consisted.

Practical Department.

CORPORAL PUNISHMENT.

BY JAMES L. HUGHES.

The School Board of Boston recently became alarmed at the extent to which corporal punishment was practised in the schools of that city. They appointed a committee to take into consideration "the whole subject of corporal punishment in our schools." This, committee consisted of three members, who gave the subject a careful investigation without agreeing. Two reports were presented, two members reporting in favor of abolishing corporal punishment altogether, and one against so extreme a measure. The writer of the minority report was Mr. Hyde, who is described by the *New England Journal of Education* as one of the most eminent of the Boston teachers until his recent resignation. Mr. Hyde gives thirty-two reasons in support of his views, which will be found below.

A great deal of consideration is given to this question, and many resolutions concerning it are passed. There is, perhaps, no question with regard to which young teachers need more direction. It is a matter for congratulation that popular sentiment no longer tolerates the brutality of a Squeers, and that those teachers who are too lazy or too incompetent to resort to more reasonable methods of discipline than flogging for ordinary offences, are being driven from a profession they too long disgraced. It would be a pity, however, to allow indignation caused by the abuse of the rod to prohibit its proper use. "It is not the use of the rod that is objectionable, but the abuse." No thoughtful teacher of experience would recommend that whipping should follow every breach of rule, but most teachers know that there are cases in which it is a most humane and kindly act to administer a severe punishment. If the rod be used too frequently it loses its power for good, and retains all its evil effects in an intensified degree.

It is desirable to avoid going to extremes in regard to this question. The London (Eng.) School Board had an "awakening" a year and a half ago in regard to the "brutality" of whipping, and decided against it. It is already clear that a mistake was made, as more objectionable modes of punishment have been resorted to, and with poorer results. School Boards should not prohibit the use of corporal punishment, but they should take such steps as will secure its proper administration. This may be done as follows:

1. The instrument of punishment should be prescribed.

2. Teachers should be compelled to record their punishments in a book furnished for the purpose, giving the names of pupils punished, the extent of the punishment, the dates, and the offences which led to the punishment.

3. Teachers who cannot manage a class without too great a use of the cane, should be dismissed as incompetent. A clause allowing such action by giving a month's notice, should be inserted in the agreement with the teacher.

The instrument should be such as will produce immediate pain, without marking or permanently injuring the child. A piece of rubber belting, fifteen inches long, and one and a half broad, is probably the best that can be procured. This will produce results severe enough to be a "terror to evil doers," without injuring the child, or exposing the teacher to indictment in court. If punishment be given with a cane, it leaves ugly marks for some time, even though the punishment may have been light.

The record of corporal punishment will be valuable both to trustees and teachers, especially to the latter. It will be a protection to them against exaggerated stories concerning their whippings, and it may serve as a monitor to remind them of a tendency to resort too frequently to the rod as a means of discipline. Many well-meaning teachers would be astounded by a faithful record of the flogging done by themselves. Having to record the punishments will lead to a thoughtful consideration of offences, and this will usually reduce the whippings by at least one-half.

The following rules are suggested to teachers in regard to corporal punishment;

1. Do not whip, until you have tried earnestly to substitute other punishments.

2. Never whip when angry.

3. Whip severely; you will cause a smaller amount of suffering in the end by doing so. The idea that it is the disgrace of whipping that boys fear is a mistake. Some tender-hearted teachers advocate slight punishments on this plea, and show a total ignorance of boy nature, and the true object of punishment, by so doing. It is surely monstrous for a teacher to aim to disgrace his pupils, and to make them painfully conscious of it.

4. Whip in such a way as not to mark the child. Whipping on the hands is, as a rule, the safest plan.

5. Whip before the school, not to degrade the offender, but for the benefit of the class.

6. Notify parents of the time at which you propose to whip their children. This will restrain you from punishing for trifles, and will secure the co-operation of reasonable parents. It will also save you from the accusation of whipping from spite. It will bring the weight of the influence of parents to your aid in discipline more directly than anything else can do. If any object to allow their children to be punished by you, insist on your right to punish, but frankly offer to leave the punishment with the parents, if they will undertake to do it. What the teacher wants is to secure obedience, and if he can be relieved from the unpleasant duty of enforcing it by whipping, all the better. He must have the prompt submission of the pupil, however, and should refuse admission to those pupils whose parents object to their being punished in a reasonable manner.

7. Keep a record of the number of whippings given in your class, giving dates, offences, and extent of punishment.

THIRTY-TWO REASONS WHY CORPORAL PUNISHMENT SHOULD NOT BE ABOLISHED IN OUR PUBLIC SCHOOLS.

By George B. Hyde, Member of Boston School Board.

1. Punishment is ordained in the government of God, and universally recognized as an important element in the government of man.

2. As corporal punishment is sanctioned and authorized by all governments as a legitimate instrumentality for the management and control of children in school, therefore no teacher fulfils his whole duty who does not use corporal punishment when necessary to enforce obedience and break up vicious and demoralizing habits.

3. As the statutes of our commmonwealth virtually require, as the first duty of a good citizen, obedience to the powers that be, so it is the duty and right of the teacher to enforce such wise and wholesome regulations in the management of the school as he may judge most effective to secure complete obedience.

4. There will be a lower standard of discipline and attainment in schools where the *right* to punish is taken away.

5. Society and family organizations cannot, or at least do not, exist without penal punishment. Many families in high position in life, as well as those in more humble circumstances, advocate and administer corporal punishment in home government.

6. Wherever there is law there must be power to enforce the law, and all government is a farce and a mockery without the power to maintain authority.

7. The teacher stands "*in loco parentis*," and consequently is fully authorized to use the same punishment in school as judicious parents exercise in home government.

8. The school committee has no moral right to take from the hand of teachers this instrumentality for the government of scholars in school.

9. Prohibition on the part of the committee to use the rod in school is a manifest injustice to teachers, unless a state law is passed prohibiting corporal punishment in families.

10. Distinguished teachers in all the past have contended, with almost perfect unanimity, that corporal punishment is necessary to secure efficiency and good government in education.

11. We have more faith in the judgment and experience of practical educators on the subject of corporal punishment than in the preaching of those who deal only in theories.

12. Abolishing corporal punishment in our schools is taking from our teachers the power to enforce obedience.

13. The abolition of corporal punishment will introduce into our schools more objectionable, and often cruel punishments.

14. The abolition of corporal punishment will necessitate the expulsion of refractory and obstinate pupils from school, or they, remaining as members of the school, will be a constant annoyance to the teachers, and also a great hindrance to the progress of good and industrious scholars.

15. In the expulsion of bad boys from school the committee practically nullify the Stae law relating to children growing up in ignorance and crime, and in reality make criminals, and send to prison, disobedient and vicious children, who should be governed and controlled by wholesome school authority, sanctioned by law.

16. The child thus expelled, when a man, will hold the teacher and the law responsible for neglecting to enforce obedience, and thus sending him into life wayward, lawless, uneducated, and ill fitted for the duties of life and good citizenship.

17. Ungoverned boys, expelled from school, will, most likely, when men, be ripe for mischief and crime.

18. The triumph of one bad boy in breaking the rules of the school, induces many others to resist authority; but if he is made to submit to wholesome and wise regulations, all the children will understand that disobedience and obstinacy are followed by pain and disgrace.

19. The knowledge on the part of scholars that corporal punishment can be inflicted, very largely prevents the necessity of punishment.

20. Horace Mann says, in a lecture on corporal punishment, delivered in 1839 to the female teachers of Boston: "It is better to tolerate punishment, in cases where the teacher has no other resource, than to suffer disobedience and insubordination."

21. Select and private schools may be often successfully conducted without resort to the rod; but in most public schools, composed of scholars heterogeneous and often difficult to manage, the use of corporal punishment is often absolutely necessary.

22. Sympathy should not wholly be expended on bad boys, for the good ones are certainly worthy of their share, and entitled to as much of the teacher's time, care, and thought. Often troublesome and designing boys impose on the physically weak; but deserving and faithful scholars should be protected from insults and the attacks of vicious boys, which protection cannot generally be successfully accomplished without resort to the rod.

23. Nature, in her earliest instructions, teaches the lesson that bodily pain follows the violation of her laws. As Nature appeals to fear of physical suffering to compel obedience to her laws, is it not the duty of parents and teachers to enforce by physical pain a respect and compliance to laws intended for the child's social, intellectual, and moral advancement?

24. If the disuse of corporal punishment encourages disobedience and defiance to law, and consequently troublesome and unruly boys are turned into the street, generally to fill our penal institutions, we contend that it is far more unjust to the young thus to place them in imprisonment than properly and wisely strive to train our youth for a happy and successful manhood by such physical pain as will compel obedience to healthy school authority.

25. It is maintained that corporal punishment has been abolished in schools with no unfavorable results. If such is the case, it will generaliy be found, so far as public schools are concerned, that other, and far more objectionable methods of punishment have been adopted, and that the discipline is lax and weak, the instruction vague and pointless, and the intellectual and moral condition in a low and deplorable state.

26. The great purpose of our system of public school instruction is to properly educate all to become men, pure in heart, sound in body, moral, wise, and useful citizens, and not turbulent, riotous and unprincipled men. If, therefore, we take from the hands of teachers the right to enforce obedience by the use of the rod, at times and under proper circumstances, we take from him the last resort to secure implicit obedience to authority

27. Abolishing corporal punishment takes from the hands of the teacher rights secured to him in all past time by the best judicial authority, and justified by the decisions of the courts in all civilized countries.

28. The proud position of the Boston schools in past years, at home and abroad, has been owing, not only to thorough and systematic teaching, but also to that firm and uncompromising discipline which has given reputation and success to our school system far and near.

29. Enough disrespect to law and disobedience to authority are found in all communities, without any further encouragement on our part to this state of things by timid sentimentalism. It is far better to control the rising generation and enforce obedience in youth, than to populate our criminal institutions, or compel a resort to arms to quell disorder and rioting in our streets, when the same youth has reached manhood.

30. Because the right to use corporal punishment is sometimes abused by indiscreet and unworthy teachers, this is no argument that corporal punishment, therefore, should be abolished in schools Says a writer on this subject: "Because there have been cases of malpractice, should there be no surgery? Because criminals have escaped justice, should there be no pleading in courts? Because there was a Judas, should the gospel of Christ remain unpreached?"

31. While we conscientiously believe in the judicious use of the rod in public schools, yet we most earnestly desire that a constant spirit of gentleness and kindness should be manifested in all departments of our schools, so that corporal punishment may always be kept at the lowest minimum point possible in record.

32. Finally, a proper regard for the rights of all, the child, the parent, the teacher, demands that the use of corporal punishment should be properly, wisely, and judiciously administered in our schools, and that teachers who make too frequent, severe, and unnecessary use of the rod should receive the severest censure of the Board, or be peremptorily dismissed from further service.

TEXT-BOOKS AND THEIR USES.

BY WM. T. HARRIS.

More than one hundred years ago, Rousseau, in his celebrated treatise on education, which stirred to revolutionary depths the thinking minds of Europe, gave utterance to the following words against text-books: "Reading is the great misery of children. . . The pedagogues teach children words, nothing but words, and no real knowledge. . . . Children *should* learn *nothing* by rote—not even La Fontaine's fables. . . . No writings are proper for a boy no eloquence or poetry; he has no business with feeling or taste. . . . Emile"—the ideal boy whose education he was describing—"Emile must, in his *twelfth year*, scarcely know what a book is. . . . . The boy should do nothing because commanded to do it; nothing is good to him except what he himself recognizes as good. By your wisdom you rob him of his mother-wit; he becomes accustomed always to be led, and to be only a machine in the hands of others. To require obedience of the child means to require that when he is grown up he shall be credulous—shall be made a fool of. . . . What the human mind receives is conveyed through the senses; the senses are the basis of the intellectual. Our feet, our hands, our eyes, first teach us philosophy."

Here we have at once the doctrine laid down, and with it a theory of mind—the psychological basis of the doctrine. If all our knowledge is empirical, derived from our five senses, if the mind brings nothing of itself as a contribution to knowledge, it is clear that intellectual education must be confined to the development of sense-perception on the part of the pupil—the cultivation of the five senses, and the observation of the world by their means.

This theory of the mind which makes sense-perception all in all, had come to France through the seductive teachings of Hume. To Hume and his disciple Rousseau is due, in a great degree, the French Revolution. Hume's psychology has found two kinds of perceptions in the human understanding—"impressions" and "ideas." "Impressions" are the direct effects of sensation; "ideas," the derived perception of reflection. "The difference between them consists in the degrees of force and liveliness with which they strike upon the mind, and make their way into thought and consciousness. Those perceptions which enter the mind with the most force and violence we may name *impressions*, and under this name include all our sensations, passions and emotions, as they make their first appearance in the soul. . . . By *ideas*," says Hume, "I mean the faint images of these impressions in thinking and reasoning."

Thus, to Hume and Rousseau, sensations are the primary source of truth, the highest testimony of reality; and all our thoughts, reflections, and ideas are faint and fainter reproductions, and necessarily less and less real and true. All generalization, according to this, is departure from truth and reality, for it sinks out of sight the vivid impressions of self-perception. Each general idea—such, for example as house, man, tree, water, air, matter—stands for an infinite number of possible sensations, and omits all reference to their special or peculiar conditions,—the differences of each from every other.

This view of the inferiority of the mental activity of thought and reflection is a very plausible one; it comes to us naturally.

But the maturer investigations of science do not confirm such a view. We find that mere individual things are perishable, that they are continually passing away, and that they do not possess truth or substance, and are not of an abiding character, although they give us vivid sense-impressions. Our vivid sense-impressions relate to what is transient and variable. Forces are more real than things, because they represent the processes which survive them. The force *causes* the thing, and it *destroys* it, too. The thing is a temporary equilibrium of forces.

But forces are not the permanent and abiding beings in this universe. Each force is fleeting, although it is more substantial than things are which it creates and destroys. But scientific reflection has discovered that, underlying forces, there is a "persistent force," which is the substance fixed and abiding. Herbert Spencer, in his *First Principles*, calls this persistent force the "ultimate reality;" "the sole truth, which transcends experience by underlying it."

In the scale of reality, then, recent science places lowest the *things* which we learn through sense-impressions. Next come *forces*, which have higher reality. Then comes *persistent force*, as the "ultimate reality" of the physical world. *Forces* are more real than *things*, because they cause them to originate and to disappear. The cause is more real than the effect; that which annuls or destroys. So, too, the "persistent force," which, by its energy, gives rise to all particular forces—light, heat, electricity, magnetism, gravitation, cohesion, etc.—possesses all the reality of all these particular forces in the aggregate, and far surpasses each one of them.

This doctrine of realism—or of the transcendent reality of what is general or universal—is the most wonderful outcome of the thinking mind in modern natural science. It is the most startling phenomenon in the history of human thought since the great upheaval of scholasticism; and, strange to say, it has in it many consequences which are of a similar nature to those that followed the great mental activity of that period. The discovery of the new world, the assertion of the right of individual judgment, the discovery of gunpowder, and the art of printing, the revival of learning, the Copernican system, the separation of Church and State, the foundation of the great universities, then later of the common school—all these things, and many more, flowed directly from the fermenting activity of scholasticism; the attempt on the part of Christendom to understand itself, and to have an intellectual theory of the mind in man, in nature, and in God.

In scholasticism the dominant thought was realism—the reality of *universals*, or *genera and species*, as being a more substantial reality than the reality of mere *individual things*, which are transient and perishable. The soul, God, the will, immortality, freedom, spiritual entities, were looked upon as in the highest sense realities.

So in our new realism of natural science we are finding again the universal, as genus or species, to have a higher reality than particular individuals perceived by the senses. The senses perceive limits and determinations; they perceive the "confines of being," its outermost manifestations. Recollection neglects these external results, and takes cognizance of the casual power of the process, and thus sees many in one—many results potentially bound up in one cause. Converging to the centre, reflection finds the highest reality a self-active being, a living energy, the cause of vitality in nature, and itself the highest living and conscious being.

Realism finds principles, truth, and science. Modern nominalism, starting from the dogma so well enunciated by Hume, that sensation is the highest perception of truth, cannot consistently find reality for the soul, or God, or even for *force*, or matter, or for any general idea whatever.

It is of interest, therefore, to inquire further in regard to the system of education which Rousseau attacked in his *Emile*, from the stand-point of sense-perception. This interest is enhanced when we remember that Rousseau's writings on nature and education inspired Pestalozzi, and, indeed, were adopted by him with only slight modification and addition.

After the discovery of printing, books became so cheap that people in modern circumstances could own them. Hence the reading of the printed page came to be an art which all people needed. Especially after Martin Luther had translated the Bible out of the learned tongues into common speech, men sought to have access, each for himself, to this book which contained the revelation of God to the human race.

Thus the art of printing itself was a product of that revival of learning which has resulted from the agitation of scholasticism. Books were in such demand, and were felt on all hands to be so necessary to a rational life, that the book-makers looked about for some method of multiplying manuscripts cheaper and more rapid than that of the scribes. Before the art of printing, a Bible might have cost £1000; a set of Aristotle's works, £800; a Homer, £300. Only the rich man, or some institution, could afford to possess a book.

With the advance of the art of printing, any poor man might earn money by a day's labor to pay for a Bible.

Before printing, only the specially favored, the wealthy, or the members of a monastery, or of some other institution that possessed books, could read for himself any of the writings which preserve for us the wisdom of the human race. Only one of a great many could approach near enough to light his individual torch at the sacred flame of Reason, which the gift of God, or the labor of human genius, has kindled. The progress of the race in intelligence and observation was necessarily very slow.

The unaided man is a very feeble animal. If he borrows no ideas from his fellows, and receives no hint from them of the results of the aggregate experience of the human race, he gropes about all his life, neither observing much nor thinking much. It is only when, by intercommunication and education, each man is made recipient of the fruits of the experiences of all, that the miraculous greatness of human life becomes apparent. Each individual is given, by means of education, the net result of the experience of the human race. Each rides on the shoulders of all. Each one thinks and feels over again within himself the condensed results of human thought and feeling; each man becomes a compendium of mankind; and this is the miracle of life. That all live for each, and each lives for all, is a symbol of the mystery of vicarious atonement—the deepest spiritual fact in human life. The measure of painful experience in life is infinitely diminished for each man, through the fact that he may avail himself of the experience of his fellow-men, and reap the wisdom of that experience without having to pay for it by the suffering and pain which it has cost originally.

This participation in the life of the species is the means by which man, as a mere particular individual, becomes the species or genus—the entire race. For all education means precisely this: that the individual shall grow through the experience of his fellows. He shall learn what they have observed with their senses, and thus increase his own insignificant powers of observation, by adding to himself the fruits of the observation of all men. The great geniuses of observation,—the Humboldts, Cuviers, Agassizes, Leeuwenhoeks, Virchows, Lyells, Galileos, Herschels, Darwins,—these, and their like, shall see and observe for him as much as for themselves. Without repeating their drudgery, he shall enter into the fruition of their labors by means of the instrument of intercommunication, language, and its preservation by written or printed words. Not only the observers of nature, but the observers of the history of man, are still more available to the individual. There are the great artists, poets, and literary men who have possessed the genius to probe the human heart, and to reveal it in the literature of the race,—Homer, Sophocles, Dante, Shakespeare, Goethe, Phidias, Praxiteles, Michael Angelo, Raphael, Beethoven, and Richard Wagner. What revelations of ourselves to each of us may we find in their inspirations! The nature of each man is found fully revealed only in the history of his entire species; the possibilities of each man become realities first in all men, and then by education,—the process of seeing and learning to see this revelation of our deepest innermost selves in the history of mankind, and its utterance by the gifted men of genius,—by this process of education we realize again in the individual what has been lived by the race.

Not only the artists and literary men have revealed the human race: the historians have done it; the law-makers have put it into their codes; the political leaders have uttered it as watchwords of the onward movement of humanity.

Thus man reinforces himself by the sense-perception of his fellow-men; seeing all places, investigating the near and the far, making present to his senses all that is and has been, by means of the recorded observations of his fellows. Thus, too, he comes to know human nature as revealed in human history; its passions and aspirations, its defeats and sorrows, its triumphs and joys. Besides these immediate aspects of the world of nature and of man, in the seeing of which he uses the senses of all mankind, there is the realm of reflection, wherein he makes the labor of his fellow-men still more useful to him.

The thought and generalization of the race is even more available for the individual man than is the sense-experience or the emotional experience. Reflection, which, as we have seen, devotes itself to the task of finding the permanent under the variable, the *deeper reality* under the transient phenomena visible to the senses; reflection creates what is by far the most valuable for the education of the individual man. Reflection on the nature of the will has, in the course of human history, summed up the net result of human deeds and actions in a code of morals. In a dozen sentences it sums up the experience of the race: Thou shalt not do this deed, nor that other deed, because it will render impossible the participation of the individual in the life and experience and deeds of his fellow-men, and hence would reduce man to a brute, so far forth as this and such deeds are practised.

Generalizing theoretically, reflection has discovered the laws of nature, and made natural science; it has transcended the realm of unconscious nature, and discovered the character of the first principle, and the course or trend of the world, as the revelation of a conscious personal Creator.

Now it is evidently a great mistake—a heresy in education—to

suppose that the unaided individual can develop into a rational being except through participation in the labors of the human race. It is a heresy in education to suppose that education is anything else than this initiation of the individual into the wisdom which mankind has accumulated.

The fact that what is valuable and substantial in human experience is preserved for us, and made available for each and all by the printed page, indicates at once the central object of the school. The school shall teach the youth how to master the printed page, and how o enter into the fruition of the moral and intellectual treasures of civilization.

The text-book has been invented as the most important instrument in this process. The child shall be taught how to read. But this is not enough; he shall be taught how to understand and verify what he reads. Nor is this enough: he shall be taught *what* to read,—how to come at the valuable books, and how to recognize them, and how to know the directions in which to look for substantial help.

Thus we have several stages in the process:

(*a.*) There is mere reading and writing. The youth is required only to master the art of word-making, and of representing words by written signs. This is chiefly a mechanical activity of the mind; mere memory of forms and sounds, mere skill of the hand and fingers.

And yet, for the bright, intelligent boy or girl, this small gift from the school is sufficient to start him or her on a career of self-help, and open for him the entire world of intelligence. Mere mechanical reading and writing,—who will say that it is not far more useful and valuable to the dull and stupid child than any other mechanical art he may ever possess?

But such mere mechanical art of reading and writing is so far inferior to the art of reading and *understanding* the printed or written words, that our teachers and educational critics are accustomed to pronounce it altogether useless.

(*b.*) Hence it is elsewhere conceded theoretically that the school should teach how to *understand* words rather than to repeat them parrot like, and that mere repetition without sense is a process of deadening the mind. The school, then, shall find its chief function in teaching how to understand the word.

A great instrumentality in this work of the school is the class recitation, properly conducted. According to its lowest interpretation, the class recitation is merely the occasion on which the teacher ascertains how much of the book the pupil has memorized. According to a higher interpretation of its function, the teacher finds the recitation a place for probing the mind of the pupil, and ascertaining his power of comprehension of the lesson; correcting his distorted views, developing his expression of thought in his own language, enlarging his vocabulary of words by teaching him how to use the technical terms which human thought has set apart for the expression of accurate ideas.

The highest idea of the recitation notes, too, the greatly stimulating effect on growing thought which arises from the fact that the pupil sees the thought of the lesson expressed variously by different pupils, each one from his own narrow view seeing some special application of the meaning of the text, and only dimly seeing, or else altogether ignoring, other phases.

But each pupil in the recitation adds to his own peculiar view the views of his fellows, and the teacher corrects and widens the view even of the text-book; and thus the pupil goes away from each recitation better prepared to get from the printed page what it contains, and to detect its inconsistencies even, if it has any.

The true idea of the recitation, moreover, develops largely the *method of investigation*, which may be called the highest method of instruction. It teaches the pupil to verify everything by his own experience. Hence, for whatever belongs to natural science, it produces experiment or exhibits specimens and illustrations. For the logical demonstration, it requires the pupil to exhibit the necessary relations in his own language; for matters of history, illustrations from present life and experience. The process of seeing the bearing of everything in the book upon what is present in the life of the pupil and the community, is the true method of instruction. But far the greater part of instruction relates to results of reflection, and so is to be verified by the activity of thought, and does not need ocular experiments or specimens.

It is the great emphasis which has been placed on this one side of the method of investigation that has led to placing too much stress on the so-called "oral method," and the undervaluing of text-books as instruments of school education. It has been assumed that this matter of verification, which is so important, is the only thing, and that each one may substitute original investigation entirely for verification of the results of others.

The human race has been constructing this ladder of human experience and science for more than six thousand years. If we decline to use this ladder, and try to make one for ourselves, we shall not do much more than the first generation did; while *with* the aid of this ladder, in our school years, from six to twenty years, we may traverse and verify the entire length of this enormous period of human life.

The text-book, then, may be always regarded as an aid to the school—a most potent instrument for good: enabling the bright pupil, even with the worst methods of instruction, to participate, by his own efforts, in the recorded experience and wisdom of mankind; helping even the dull and stupid to some extent; under the highest method—that of investigation—rapidly stimulating the powers of self-activity in the child, so that he becomes able in interpreting and comprehending the results of others, and in adding new discoveries and new ideas to the aggregate product of his race.

Two objects to be obtained in the study of the text-book thus appear. The one, the substantial or objective one, is the occupation of the mind with truth—with what has been tested and found essential to civilization. The other phase is the self-activity of the pupil, the element of subjective growth in perception and thinking. For a spiritual being, naught exists except what occupies his self-activity. He must act upon it, and make it his object. What he does not comprehend is no truth for his consciousness. The side of self-activity of the pupil is therefore *indispensable*, but it is not everything. Self-activity, without an objective substantial result, is a mere *formal* activity, and does not result in education in any high sense of the term.

There must be a union of *formal* and *substantial* in school education. The *what* to study is as important as the *how* to study. The course of study and the proper order of studies belong, therefore, to the substantial side of education, and form an object of pedagogic study quite as important as the investigation of the method of instruction.

"Text-book instruction" is the form of school instruction adopted by the deep instinct of modern society, as the most direct and effective method of initiating the individual man into spiritnal participation in the activity of his race. By it our system of instruction is best enabled to secure what is substantial without sacrificing the formal.—*From Education.*

HOW CAN PRIMARY CHILDREN BE INTERESTED?

When a child commences school life, at the age of six, he has sense, perception and imagination highly developed, but his reaoning power has received very little cultivation. If we wish to get and hold his attention, we must present something to him which will appeal to the first two faculties mentioned.

We have but little trouble interesting our primary children while they are reciting, but to do with them while the teacher is busy with another class is not so easy.

It will not do to give a child his alphabet and tell him (as was formerly done) to study those letters. Even if he knew *what* the teacher meant by studying, he would not know *how* to do it. Endeavor to give the child some objective work—something that he can see and handle.

Shoe pegs may be put to a variety of uses by the children, which will be found interesting and instructive. All number work may be made with them. The tables of the "Grube Method" are easily so formed. Of course the teacher should have the tables placed on the board, using, not figures, but straight marks, so that the children may copy them on their desks. If the "Grube Method" is not used, tables can easily be formed by the teacher thus: 11+11=1111, 111+11=11111, and so on.

The pegs may also be used in forming designs, composed only of straight lines. Squares, oblongs, triangles, diamonds, and various other shapes may be made with them; and then these figures so combined and arranged as to make very pretty designs.

It is surprising how quickly the pupils will learn to make an exact copy of such work, and how very soon they will learn to make original designs.

Different colored cards, cut into any shape, are used in the same manner as the pegs. The cards will teach an additional lesson, that of combining colors. Cigar splints and wooden toothpicks are also good to be used in this way.

But if kept at this kind of work long at a time, the children will soon weary of it and become restless or idle. Then have each one provided with a slate and a good pencil, and have work on the board especially adapted to be copied upon their slates, such as figures, or some simple tables made with figures, as—

1+2=3
3+2=5
5+2=7, and so on.

After these tables are learned, it is a good idea to erase one of the three figures in each line, allowing the pupils to fill the blanks.

When the class has learned to form some of the script letters on the slates, have them copy simple words, composed of these letters. If the teacher can get alphabets printed on cardboard, that will make a very profitable exercise for her primary classes. About five alphabets should be allowed for each pupil. The strip on which the letters are printed should be cut so that each letter will be on a card by itself. With these the pupil can spell quite a number of words, copying either from books or from the blackboard.

In some such ways as have been suggested, our primary children may be kept busy, quiet, and consequently happy.—*Indiana School Journal.*

SPELLING.

I transcribe on paper or tablet the pictures of words that I have in my brain. This is the process of spelling, and needs not the slightest qualification or explanation to make itself clear to any one who will think of exactly what they would do when they write a word. If we misspell a word, our brain-picture of it is defective; when we *think* it wrong, we are comparing the written form with a brain-form. Our attention to this form brings it more distinctly into the consciousness, and the mistake is seen and corrected.

Words oftentimes come into the brain as combinations of sounds (names of letters), which must be translated into forms before they can be written. If this has not been done previous to the act of writing, a double and difficult process takes place, which, together with the absorbing thought of composition, renders such translations imperfect. Thus many persons who spell exceedingly well orally, make many mistakes in writing. A teacher took three prizes at spelling-schools, and made five mistakes in spelling in a short note to a school committee!

The foundation of spelling should be, then, the reception in the brain of forms, not sounds. The most favorable conditions for the mind's perception and retention of correct word-forms, when ascertained, will give us the best possible method of teaching spelling. First, then, the closest attention to a form to be retained is brought about by the most energetic exercise of the sense of sight upon that form. The closest attention to a form is attained by attempting to draw it. The closest attention to a word that can be given, is to draw it,—that is, to copy it in writing

All primary study of spelling should be by copying words. Let me repeat: as drawing is the best method of training sight, so drawing words is the most economical and practical method of teaching spelling. Trained sight will take in a word-form at one sitting, so that it can be correctly reproduced with great ease.

Two more very important principles, and I will give the details of a natural method. The forced attempt to reproduce or express that which is vague and indistinct in the mind, is detrimental. Original mental representations or pictures are the results of repeated action of the perceptive faculties upon the same objects. They grow into distinctness very slowly indeed; thus, the little child must hear the same word hundreds, perhaps thousands of times before it attempts to utter it. There comes a time, however, when the accretions of impressions of the same spoken word, by its own vividness, force the child to utter it,—the first word.

In like manner the word-form, slowly produced by close seeing (writing), should not be reproduced until it is distinct in the mind. The child should be prevented, so far as possible, from seeing, or even reproducing, incorrect forms, for they stamp themselves as readily upon the mind as correct forms, and will turn up on paper as unwelcome intruders. The same is true of all forms and expressions,—capitals, punctuation, and syntax. The details of the method, founded upon these principles, which I have endeavored to follow for several years,—and I think with excellent results,—are as follows:

1. The first year (lowest primary) should be spent in copying words, with little or no reproduction, without copy. Language consists of reading (recalling ideas), and composition (expressing them). Reading the composition should be taught together as two branches of language. Every word and every sentence taught should be copied from the blackboard on the slate, and then read from the slate. No matter how crude and awkward the first copyings are, they should be commended, and the writer encouraged. They are types of the child's crude percepts. Perseverance will soon bring order out of seeming chaos. The better the picture of the word the child makes, the more distinct will the impression be upon the mind; therefore, technical writing should be taught from the first. The writing of words and sentences helps reading essentially, and if it were done for no other purpose, the time would be well spent,—time which would otherwise be given to listlessness or tiresome idleness.

2. At the end of first year, quite a number of distinct mental word-pictures will be stored in the mind, ready for reproduction. Begin carefully: after a word has been copied from the board, erase it, and have it reproduced without copy. Do the same with two words, then three, and so on. Write a sentence, erase part of it,—and then cause the whole to be written. *Never have one word written incorrectly*, if you can possibly avoid it.

3. Teach those words only which your pupils use in language. This rule holds good throughout the course. By language I mean words used in any and all recitations. When a word is misspelled, have it corrected immediately. Keep a list of misspelled words, and teach no other words until they are *learned*.

4. Teach the most-used words first,—words like *is, are, were, was, been, shall, will, they, there, their, which, whose*, etc.

5. Teach words separately, and in sentences. The best test of spelling is writing from dictation.

6. No word should be taught until it is the sign of a distinct idea in the mind of the learner. The first year, the child should be trained to express thought orally; the second year, to talk with the pencil, which involves the reproduction continually of words which he knows. The spelling is made a minor branch of language-teaching, taking very little extra time.

7. During the third year, oral spelling can be introduced as a valuable auxiliary. It will be found in the third year, if this method has been faithfully followed, that children will write correctly most new words after reading them *once*; this is a trained product of trained sight.

8. All study of spelling should be by copying words and sentences in the best possible handwriting. The copied words should be marked and corrected just as carefully as any other lesson.—Supt. F. W. Parker, *of Quincy, in the Primary Teacher.*

USELESS STUDIES.

The other day a young girl of our acquaintance, who is pursuing a selected course of studies in one of the collegiate institutions of

the city, was examining the printed curriculum with reference to deciding what study she would take up next term. While consulting about the matter, she read over a list of text books on science, language, literature and mathematics, when suddenly she exclaimed:—"I'll tell you what I'd like to study—I would like to study medicine. I don't mean I want to be a physician and practise, but only to know what to do at home if anybody is sick or anything happens. I am sure it would be more useful to me than"—and she turned to the prescribed course of study—"spherical trigonometry and navigation! What is the use of my studying navigation? But we can't run for the doctor every time anybody sneezes or coughs, and I would like to know what to do for anyone who is a little sick." Here is a matter concerning which young women need some simple but careful instruction. But who gives them any? As daughters in the family, they can repeat the dates of the Grecian and Roman wars, work out an intricate problem in algebra, and give the technical names of the bones in the body; but if the baby brother left in their charge burns his hand or is seized with croup, how many of them know the best thing to do while waiting for the doctor? And when, as wives and mothers, the duties of life increase, how many of them have any practical knowledge which will help them to meet calmly and intelligently the every day experience of accidents and illness which are inevitable in every family?

Notes and News.

ONTARIO.

The Public School of Brigden, near Sarnia, averages 70 scholars.

We clip the following sensible remarks from Smith's Falls *News*, Nov 19: "A new and practical method of teaching composition is adopted in the high school. The substance of a newspaper paragraph is related to the pupils, and they are required to write it out in the form of a connected narrative. The exercises are then compared with the original; and the various readings, synonymous words, phrases, etc., are discussed with the view of ascertaining the most appropriate forms of expression. We venture to predict a more familiar knowledge of our mother tongue may be acquired in this way, in a few months, than from a system of rules imperfectly comprehended, and seldom familiarized by a prolonged course of study."

Mr. E. A. Stevens, of Delta, has accepted the position of principal of the Renfrew Model School.

Mr. J. T. Bowerman, Head Master of the Pakenham Public School, has been appointed to the Head-mastership of the Perth Model School.

It is not generally known that through the Smithsonian Institution at Washington discoveries of planets and comets, made on the American continent, are transmitted by cable abroad, and that it is the recipient of such astronomical finds as are made in Europe, which, in its turn, it announces to the principal observatories in the U.S. and Canada. This transmission of intelligence is not restricted to the discoveries of planets and comets alone, but includes that of any remarkable phenomenon which may suddenly present itself in either country, such as that of showers of shooting stars, &c. Heretofore, the Smithsonian Institution has cabled such astronomical events to Greenwich, Paris, Berlin, Vienna, and Pulkova, communicating the European discoveries which it receives to some seventeen different observatories in America. It is quite possible that a more perfected series of ciphers will be devised, and that, in order to avoid risk of error from confusion in transmission of the dispatch from the Smithsonian, in the future but a single observatory in Europe will be informed, which astronomical centre will probably be at Kiehl. It is also under consideration to have repeated the same dispatch, some twenty-four hours afterward, so as to remove all chance of error, either on the part of the sender or the receiver of the astronomical dispatch.

An interesting essay of School Hygiene was read by D. C. Freeman, of Milton, at the Walton Teachers' Association at Oakville, and is published *in extenso* in the Milton *Champion* of Nov. 11th. It treats of the History of Hygiene, and the important questions of Light, Drainage, Air, &c.

It would be an excellent thing, says the *Daily News*, London, Eng., if some schools for young women, similar to those which have recently been founded in Wurtemberg, were opened in England, as the course of training for household duties imparted at them cannot fail to be of the greatest utility. These Wurtemberg schools, intended for the daughters of small farmers and peasants, are only open during the winter months, and each of them accommodates about thirty pupils, the fee of tuition being about five and twenty shillings, while a sum equivalent to ninepence a day is charged for board and lodging. The manageress of the school sees that her pupils are taught cooking, washing, house cleaning, and so forth, while the ordinary village schoolmaster is employed in the afternoon to give them lessons in reading and writing. A medical man also gives lectures on natural history and domestic medicine, so that nothing is neglected which is likely to make good house wives of them. The system of Herr Clauson-Kaas, which was first applied in Denmark, is also making its way in North Germany, though many of the masters do not much like the idea of having to teach the lads in their schools the rudiments of their future calling, for this is what the Clauson-Kaas system practically amounts to. That it might be introduced, with certain modifications, into England is probable enough, but more importance attaches to the Wurtemberg experiment, which has in a very short space of time done wonders there, and which, if it succeeded in this country, would do much to lengthen the lives of the agricultural labourer and the small farmer.

The Brampton County Council have appointed a committee to secure accommodation for the County Model School.

Attendance at Bowmanville High School is given at 60; three pupils have matriculated lately at Toronto University.

Mr. A. P. MacCullum, B.A., Head-master of Listowel High School, has sent in a report to the N. S. Board, in which he states that the attendance of the pupils has risen from 40 to 70.

At a meeting of the London (Ont.) Board of Education on Nov. 2nd, a communication from the Minister of Education was read, recommending further improvement in school accommodation. Rev. Mr. Checkly presented a report, by which the average attendance appears as, boys 124, girls 129.

At a meeting of the Napanee Board of Education on Nov. 4th, a letter was read from Dr. J. A. McLellan, H.S.I., stating that a marked improvement in school accommodation since his last visit to Napanee High School was observable.

The Institute of Bankers have issued a programme of the examinations which must be passed by those who wish to obtain their certificates. The subjects are:—1. Arithmetic and Elementary Algebra; 2. Book-keeping; 3. Commercial Law; 4. Political Economy; 5. Practical Banking. The examinations are divided into two parts, extending over a period of two years, the first examination being of a preliminary character; and the second to be held after the lapse of not less than one year from the first, being of a more advanced character. Both examinations are held in the month of May of each year, and candidates must give notice to the secretary of their intention to present themselves for examination before the 1st of April. Candidates are informed that bad handwriting may be visited with loss of marks, and that the general style and intelligence of the answers will always be taken into account.

In the Collingwood Collegiate Institute, fifty-nine candidates passed at the recent Intermediate examinations—not thirty-six, as previously reported. Of these, four passed in grade A, twenty-three in grade B, and thirty-two in grade C. Of the second-class candidates, only one had previously passed, who now had obtained a C.

The bright little *Sunbeams* from Ontario Ladi-s' College, Whitby, is on hand, and tells of the continued success of the College.

A graphic sketch of life at Queen's College, Kingston, appears in the Montreal *Spectator*, from the pen of *Fidelis* (Miss Machar, of Kingston).

The November *Gentleman's Magazine* contains a brilliant philosophical essay on Evolution and Geological Time, from the pen of Mr. Grant Allen, of whom as a thinker and writer Canada has reason to be proud. Mr. Grant Allen is son of Mr. Allen, of Alwington, Kingston, a gentleman well known for his interest in education and literature.

In regard to the higher education of women, the Welland High School practically takes the lead of all the educational institutions in the Dominion. Two young women attending the school are now preparing for the Second Year examination in Toronto University, taking the full course of subjects and Honor Classics in addition. Four other young women are preparing for matriculation in honors.

The students of the St. Thomas Collegiate Institute are holding successful literary meetings on Friday evenings. A piano has been procured, and Mrs. A. Potts, editress of the *Chronicle*, takes much interest in the proceedings.

Mr. E. A. Stephens, of Delta, has accepted the position of Principal of the Renfrew Model School.

Mr. D. A. McMichael, B.A., Principal of the Strathroy High School, has been granted a three months' leave of absence on account of ill health. Mr. E. L. Embree, B.A., will take his place.

The following list contains the names of those who successfully passed the professional Examination for third-class certificates, at the close of the Milton Model School: *Ladies*—Minnie Allen, Minnie Fox, Annie Ganton, Bella Gillies, Elizabeth Hutchinson, Isabella McCarson, Mary Tuck. *Gentlemen*—Charles E. Carey, John Fisher, Joshua Hamilton, Peter Huffman, W. J. McGregor, Charles McHugh, Geo. C. Smyth. Miss Fox passed the second class for professional, Grade A, and Miss Ganton, Grade B, at the Oakville High School. Miss Allen, Grade B, and Miss Tuck, Intermediate, at the Waterdown High School. Mr. McHugh, Grade B, at Brampton High School.

It is proposed to change the name of the University of Toronto to "The University of Ontario."

We are glad to see that the Chatham *Tribune* urges the formation of night schools in that town this winter. The *Tribune* is a brisk paper, a valuable aid to the education cause.

The *Varsity* is a paper purporting to represent the students and graduates of Toronto University. Some of the articles, notably that on Co-Education, by Mr. Houston, are really good, both in form and matter; in others there is a certain Lord Dundreary tone, of which we have had quite enough in certain Old Country College serials: *e. g.* when the "Patriarch student" complains that he "cannot get a dinner properly cooked in Toronto." That sort of affected imitation of what is itself affectation, the soft manner of what Mr. *Punch* calls the "crutch and toothpick brigade," is a sham, aping a sham of foreign origin, the "secure power" of a sham, and, as such, is not needed in Canada.

At a meeting of the Perth Board of Education (Perth *Courier*, Nov. 5), Mr. A. Embury, of Newburg, was appointed Head Master of the High School, at a salary of $700. Mr. D. S. Smith, of Lennoxville, was appointed Classical Master, at a salary of $750. A congratulatory address to Mr. T. L. Carey, B A., was voted on the occasion of his leaving Perth for the Grimsby High School.

The Brantford *Expositor* gives a list of late students of the Brantford Collegiate Institute, now employed in educational work. The *Expositor* severely criticizes the *Hamilton School Magazine* for indirectly attributing disgraceful moral obliquity to the examiners.

NOVA SCOTIA.

The annual opening Convocation of Dalhousie College was held in the Legislative Assembly Room, Province Building, on the 2nd ult. The proceedings attracted, besides the Senate, Faculty, Undergraduates, and Alumni of the College, a large and brilliant audience, embracing leading clergymen of different denominations and many of the foremost citizens of Halifax. The Principal, Very Rev. Dr. Ross, referred in terms of emphatic recognition to the munificent benefactions of George Munro, Esq., of New York, and explained in detail the recently founded "Munro Bursaries." These are seven in number and are of the annual value each of $200, being tenable for two years, when they are to be open for further competition among the students of two years' standing. The following will indicate both the territorial allocation of the bursaries and the persons by whom they were won at the recent examination:

I. For the Island of Cape Breton—Not awarded.

II. Counties of Pictou, Antigonish, Guysboro—D. J. Morrison, Pictou Academy.

III. Counties of Colchester, Cumberland, Hants—E. M. Dill, Pictou Academy.

IV. Counties of Halifax, Lunenburg, King's—Hiram Elliott, Canard, Private Study.

V. Counties of Annapolis, Digby, Yarmouth, Shelburne, Queen's—Frank Jones, Digby.

VI. New Brunswick—Not awarded.

VII. Prince Edward Island—John P. McLeod.

The Professors' Scholarships in Arts were won as follows:—

1. H. Adams, Halifax High School.
2. John Pitblado, " " "

The Scholarship in Science was awarded to H. McN. Smith, Halifax High School.

The degree of M.A. was conferred on Rev. D. F. Creelman, B.A., and that of B.A. on Messrs. Creighton and Blanchard. The Inaugural Address was delivered by Prof. McGregor, M.A., Ph.D. The Inaugural was a thoughtful, comprehensive sketch, or review, of the development of science. It abounded in forcible passages, keen pleasantries and sound thought. Two of the Governors, Hon. S. L. Shannon and the Chief Justice, Sir William Young, followed with appropriate addresses. The latter spoke with his usual fire and effect, and announced amid loud applause that Mr. Munro had definitely endowed another chair in the College, viz., that of Rhetoric, with a guaranteed income of $2,500 annually, and that the Senate had, with great unanimity, elected the Rev. John Forrest to fill the chair. It is understood that the newly-elected professor will not enter upon his duties this session. An intimation was given that Mr. Munro contemplated establishing a greatly extended system of bursaries.

The annual session of the Provincial Normal School was opened with appropriate public exercises on the 10th ult. The address to the students was delivered by the Superintendent of Education, Dr. Allison. Upwards of eighty students were in attendance.

Messrs. Elliott and Dill, winners of two of the "Munro Bursaries," are honored members of the teaching staff of the Province. Mr. Dill has for several years had charge of the flourishing Graded School at Maitland, Hants. In King's County, Mr. Elliott has achieved a fine record both as a teacher and as a mathematician.

Several changes have taken place in the principalships of County Academies, beside those reported in last month's notes. S. McCully, B.A., takes charge at Guysboro, and R. J. J. Emmerson, B.A., at Shelburne.

M. J. T. McNeil, Esq., formerly Inspector of Schools for Richmond County, has been appointed by the Council of Public Instruction Inspector for District No. 7 (Counties of Cape Breton and Richmond), in place of Alexander McKinnon, Esq., resigned on account of ill-health. Mr. McKinnon was a faithful public officer, and in his illness has the sympathy of an attached corps of teachers. Mr. McNeil's appointment, we believe, meets with universal approval, as that of a man well qualified for the position for which he has been selected.

William Taylor, Esq., has been elected chairman, and John Pugh, Esq., M.P.P., vice-chairman, of the Board of School Commissioners for the City of Halifax, both good appointments.

The Halifax Medical College, affiliated with the University of Halifax, inaugurated its annual session in November by a public meeting in the Legislative Assembly Room. Seldom has any educational occasion drawn together a more brilliant audience in Halifax. The chair was occupied by Dr. R. S. Black, President of the Faculty. The formal oration was pronounced by Hugh McD. Henry, Esq., Barrister, and Lecturer to the College on Medical Jurisprudence. The learned lecturer elucidated with great ability the relations of Medicine to other sciences, and impressively urged upon the students to consider well the dignity and responsibility of their contemplated profession. Short and stirring addresses followed from Rev. Dr. Hill, Chancellor of the University of Halifax; the Attorney-General, the Superintendent of Education, Hon. D. Parker, and the Rev. Dr. Burns. The college has 34 students and is rapidly gaining in public favor.

The Rev. Mr. Boone, Pastor of the African Baptist Church, Halifax, has called in question the school accommodation provided for the children of the coloured people of Halifax. Proceeding from the particular to the general, Mr. Boone denounced in vigorous terms "the color line" as unworthy of recognition in enlightened systems of education.

J. S. Morton, Esq., A.B., formerly Principal of Shelburne Academy, is pursuing a course of study at the Medical College, Halifax.

NEW BRUNSWICK.

Our New Brunswick exchanges, about the end of October and the early part of November, contained full accounts of the half-yearly examinations of public schools in all parts of the province, some of them exhibiting features of special interest. The aggregate number of newspaper columns devoted to these, particularly the examinations in the cities and towns, is very considerable, and shows that the importance of the work done at the schools is highly appreciated. In nearly all cases the exercises were enlivened by recitations, singing, etc., while in a few schools an unusual feature was introduced in the shape of refreshments. The pleasures and excitement of examination day are sometimes overdone; as, for instance, in the parish of Cambridge, where the examination was held in the evening, and after two hours spent in hearing classes, the eating and drinking, speech-making, recitation and singing were kept up till half past eleven o'clock.

There is no reason to suppose that the evil of too much schooling or too early schooling is very prevalent in this province; but there is

at least one little boy who is likely to furnish an example of it. In the paragraph giving an account of the examination of his school (which is in Sunbury County,) the following occurs : "Among the youngest is one worthy of note, Master ————, who is only five years of age. The boy, who has only been going to school about 15 months, shows remarkable progress. His school teacher, Mr. ————, feels quite certain that this little fellow has few equals of his age for scholarship in the county."

The annual meeting of the Teachers' Institute for the County of Restigouche was held at River Charles, on the 2nd and 3rd of September, when the following gentlemen were elected to compose the Committee of Management :—Rev. Thomas Nicholson, (President,) Inspector Philip Cox, A.B. (Vice-President), G. F. Dawson (Secretary-Treasurer), A. Ross, A.B., Donald McLean.

The Gloucester County Institute met at Bathurst, Sept. 23rd and 24th. Committee of Management :—Inspector V. A. Landry, (President,) Jerome Bonderau, (Vice-President,) G. W. Mersereau, A.B. (Secretary Treasurer), Miss Rainey, James McIntosh. A large part of this county being peopled by Acadian French, and many of the teachers speaking French as their mother-tongue, the greater part of the closing session of the Institute was devoted to addresses in that language. This feature should attract a large attendance of the French teachers at the next meeting.

The Northumberland County Institute held its fourth annual meeting at Chatham on the 7th and 8th of October. In the absence of the retiring president, the meeting was opened by the vice-president, Mr. Hutchinson. Besides other routine business, the Committee of Management was elected at the first session as follows : Inspector Philip Cox, A.B. (President), C. M. Hutchinson, (Vice-President,) C. G. D. Roberts, A.B. (Secretary-Treasurer), Wm. A. Duke, Wm. Sievewright. Mr. D. McIntosh was chosen Assistant-Secretary. The following is an outline of the matter brought before the Institute and discussed :

1. Illustrative lessons on fractions, by Miss Mary R. Davidson. 2. Paper on Women's Modern Geometry, Chap. IV , by Mr. Duke. 3. Address on Sight-singing, or Practical Music for Schools, by Mr. Hutchinson, illustrated by two of the lady-teachers on the organ, and with the voice. 4. Paper on Canadian History,—how best to teach the authorized text book, by Mr. Roberts. 5. Paper on Geography, and first lesson in Map-drawing, by Miss Kate Loggie. 6. Illustrative lesson on the first steps in teaching Reading, by Miss Olivia Parker. 7. Paper on Advanced Reading, by Mr. F. A. McCully. 8. Paper on the art of Reading and Speaking gracefully, by Mr. Wm. Sievewright. 9. Paper on Good Order in Schools, and how to secure it, by Mr. D. McIntosh.

At the evening session of the 7th, there was an exhibition of slate exercises, such as printing, map-drawing, narrative composition, etc., by children of the various grades in the school of Chatham, about six being chosen from each grade. A number of the teachers were appointed to prescribe work to the pupils, and when the work was finished it was examined by the teachers, who were much pleased with the result. After the completion of their labors the children were regaled with nuts and raisins. Before the close of the Institute, a proposal to allow the Secretary the sum of $10.00 for his services was considered ; Mr. Roberts, however, was unwilling to accept any remuneration, and the matter was dropped.

On account of a mistake of the Town Clerk of the town of Portland, the sum assessed upon the ratepayers for school purposes was much less than the sum required and voted. On this account, and in view of the clamor of economy (so called), it was thought necessary that the salaries of the teachers in the town, and also that of the superintendent should be reduced. These salaries were already very low. Consequently Mr. D. McIntyre, the Superintendent, Messrs. Parlee, Jenkins, Corbett, and other teachers resigned their situations. Several of these have left the profession ; others have obtained or will obtain places elsewhere. We learn that Mr. Parlee has been appointed to the office of Superintendent ; that Mr. John Lawson, formerly teacher of the Superior School at Campbelton, has become Principal of the Portland High School, and that the other vacancies have been filled. It is to be regretted that necessity compels some teachers to accept a situation at almost any salary. The effect is injurious to the profession, and to the financial prospects of other teachers. Mr. J. M. Palmer, A.B., has taken the position vacated by Mr. John Lawson.

At the September examination for Provincial School License, 123 candidates were awarded licenses, exclusive of those who failed to obtain a license in advance of the class already held, and the students in the French Preparatory Deptrtment of the Normal School, who received Third Class Licenses, valid for three years. Eight obtained the Grammar School Class, seventeen first class, seventy second class, and twenty-eight third class.

The formal opening of the Normal School took place Nov. 10th, in presence of the Chief Superintendent of Education, the President of the Provincial University, the Chief Commissioner of the Board of Works, Hon. P. Landry, and a number of other visitors. Eighty student teachers were present, besides the students of the Preparatory Department, to the number of eighteen, and the teacher and pupils of the Model School, numbering about 160. Addresses were given by the gentlemen named, and Mr. Principal Crocker read an interesting paper in relation to the work of the School. In view of the increase in the length of the session, from five to nine months, the attendance was larger than was generally expected. Among the topics that seemed to be uppermost in the minds of the speakers on the occasion of the opening, were the encouraging prospects of the French Department, and the specially liberal provisions made by the Board for the promotion of education among the French inhabitants of the Province.

The "Educational Circular," No 12, recently issued by the Department, is not inferior to any preceding number in the interest and value of its contents. This publication has become, in the hands of the judicious and painstaking Chief Superintendent, a thing indispensable to every intelligent person connected with the public school service in New Brunswick. In this later number are contained, among other things, the "Revised Course of Instruction," the "Official Minutes of the Educational Institute" of last July, with the papers and discussions that engaged the attention of the Institute ; descriptive catalogue of the "Trees and Shrubs in New Brunswick," by L.W. Bailey, Ph. D., Professor of Natural History in the University of N. B., and Edward Jack, C. E., Surveyor of Crown Lands ; "Miscellaneous Notes" on subjects of practical moment to teachers, and a number of "Official Notices," with which every teacher in the province should make himself acquainted. We shall here give the substance of some of the more important points in these latter, as being of special interest to our readers in New Brunswick.

Inspection of Schools.—The revised regulations on this subject contain a provision which will remove some existing difficulties. Wherever a school or department would be excluded from classification by the requirements that the teacher shall have been in charge of the same during the full term immediately preceding that in which the annual visit of the Inspector is made, it is now ordered that the teacher shall proceed to examine the school or department for classification, if it has been continuously in charge of the same teacher, immediately preceding the visitation, for a number of legal teaching days exceeding the number of such days in the term past expired. Thus, suppose (1) that a given school is inspected in February ; (2) that the teacher took charge of the school to fill a vacancy, after the Summer vacation ; (3) that there were 100 teaching days in the Summer term : (4) that their present teacher has kept the school for 101 teaching days next preceding the Inspector's visit ; then, if all other requirements are fulfilled, the school may be classified.

There is also a clause recently inserted in the Regulations on the duties of Inspectors, somewhat relaxing the requirements for assigning a given rank to a school ; also certain amendments with regard to the "Superior Allowance." It is further ordered that the written report and suggestions of the Inspector to the Board of Trustees shall not only be presented by the Trustees, but shall be accessible to any qualified ratepayer on application, and shall be read at any school meeting if required.

Teachers' Contracts.—In respect to all new contracts to be made with teachers, to take effect on and after May 1st, 1881, the "school-year" will terminate with the close of the term in which the school is to receive its annual visitation. This is provided by Regulation 18, as amended. The effect will be (1) that Teachers' contracts will be terminated throughout only one-half of the Province at the same time, and (2) that the continuance of teachers in their respective schools until after the annual inspection will be promoted.

Syllabus of Examination for School Licenses.—Certain additions have been made, as follows : Requirements of all candidates,—to be familiar with the general conditions of *health*, as required by the Course of Instruction for Schools. Classes III, II, I. *Industrial Drawing.*—The 1st and 2nd series of cards, with accompany-

ing manuals. "The First Principles of *Agriculture*," (Tanner.) Class III.—*Minerals, Plant Life*, and *Animal Life*, as required by the Course of Instruction for "Schools in County Districts." Class II.—*English Literature*, as may be notified from time to time through the "Educational Circular;" *Minerals, Plant Life, Animal Life* and *Physics*, as required in the first six standards. Class I.—The same, as required by the first eight standards.

The Educational Institute.—Four of the Inspectors are made *ex officio* members of the Institute (and of the Executive Committee), instead of the Provincial Examiners. For the current year, the Inspectors for districts 1, 3, 5, and 7 are appointed, and these are to be replaced by others, two at a time in rotation. The elected members of the Executive Committee will be henceforth eight in number—one more than the *ex officio* members.

From the "Miscellaneous Notes" contained in the "Circular," we extract the followiug sentence: "The department has abundant evidence, from both trustees and teachers, that a new departure, full of the greatest promise to our school system, has been taken the past year. Never in our history was so much intelligent work being done as now in our schools. This fresh interest and quickened intelligence in school work is not confined to the towns, but is manifesting itself, in a marked degree, even in the remotest hamlets." "Hardly a day passes in which the department does not receive expressions of satisfaction respecting the course of instruction. Teachers are finding the suggestive outline which it supplies invaluable to them in their work. It gives clearness and definiteness of aim, and every one knows what is expected of him."

MANITOBA.

The Protestant Board of School Trustees for Winnipeg recently found it necessary to add to the staff of teachers in the city schools; they have employed Miss Stella Roblin, who for some years has been a pupil in the schools, and whose name stood second on the list of successful candidates for a grade A certificate of the second class, in the last examination of teachers. The public schools at Emerson and Portage la Prairie each have two teachers, and it is altogether likely that in the course of a few months this number will have to be increased, as both towns are growing rapidly.

During the current year, public schools are in operation for the first time at East Selkirk, South Plympton, West Lynne, Dufferin, Clear Springs, Newhaven, Wellington, Darlington, Sharon, Union Point, etc.

We have enjoyed the pleasure of a short visit from Mr. Somerset, Inspector of Schools for the county of Lincoln, Ont. While here, he, in company with the Superintendent, visited Manitoba College and the Protestant Public Schools, and expressed surprise and satisfaction at the progress which has been made both in public and in high school work. Having unexpectedly to cut short his visit, he was unable to see the rest of our educational institutions, but he made a number of acquaintances, who look forward with pleasure to another visit from him shortly.

At the last quarterly meeting of the Protestant section of the Board of Education, the Rev. W. G. Pinkham, Superintendent of Education for Protestant schools, was unanimously re-elected to represent the Board on the Council of the University of Manitoba, for the ensuing year.

The Board of Studies of the University consists of the following members, viz., the Chancellor and the Rev. Canon O'Meara, elected by the Council of St. John's College; Revs. Dr. Lavoie and Professor Forget Despatis, elected by the Council of Manitoba College; Rev. Professor Bryce and Hart, elected by the Council of Manitoba College; and Rev. W. G. Pinkham and Hon. S. C. Biggs, elected by the Council of the University. Professor Forget Despatis is chairman, and Professor Hart, Secretary.

On November 1st, the Council of St. John's College, acting upon the powers conferred on colleges in affiliation to the University, conferred the degree of Bachelor in Divinity upon Rev. S. P. Mattheson, deputy warden of the college. In conferring the degree, the Bishop of Rupert's Land spoke in terms of warm praise of Mr. Mattheson's career, both as a student and as a master. This is the first degree which the college has conferred.

Mason's edition of Milton's Paradise Lost has been authorized for use in the Principal's department of the city schools, pending the report of the Committee on text-books, and the Board's action thereupon. The following gentlemen compose the committee on text-books, viz., the Bishop of Rupert's Land, the Superintendent, Professor Hart, Canon O'Meara, Rev. Dr. Rice, and Stewart Mulvey, Esq.

A. K. Isbister, Esq., LL.D., Head Master of Stationers' School, London, and Dean of the College of Preceptors, has presented copies of a number of his works to the library of the Board of Education.

The Historical Society has taken up the question of a public library for Winnipeg with most commendable zeal, and they have met with the success which such an enterprise deserves. The sum of $1,241 has been subscribed by citizens of Winnipeg, and the City Council at a recent meeting voted $500 to the Society, on condition that the whole of the sum be expended on books of reference, and that the collection of these and other books of reference belonging to the Society be open on every week-day evening, for three hours, free. The success of the undertaking is largely due to Rev. Professor Bryce and Mr. Alderman McArthur. Mr. Hughan, recently from Newcastle-upon-Tyne, has been canvassing for subscriptions.

Readings and Recitations.

A HEROIC DEATH.

The following poetic extract from the London *Spectator* cannot be without interest at the present juncture. It refers to the Seaham colliery explosion, and to the heroic death of Luke Dixon, a young unmarried man, who preferred to remain behind and die with his "putter" boy rather than leave the youth to pass his last moments alone. The circumstance is rendered all the more touching from the fact that Dixon was not the father of the boy, as is stated by the poet:—

"Nay, I'll stay with the lad,"
Down in the deep, black seam;
Huddled together, dying and dead,
Far from the day-world overhead,
Face to face, by a sudden fate,
With a horror of Night precipitate;
Hidden away from the merciful Sun,
The death and the burial all in one,
By their fifties cut off in vain,
More than a battle counts its slain;
Huddled together man and horse,
In the grip of the fire-damp's watchful force,—
Unsung heroes of simple mould,
All unchanged from the race of old,
To the olden truths, with a martyr's cry,
Out of the depths they testify:
And never has rede been read, I deem,
Nobler than that in the deep, black seam,
Of Love and Courage the message sad,—
Only "Nay, I'll stay with the lad."

"Nay, I'll stay with the lad,"
Down in the deep, black seam,
They found him living, and strong, and sound,
In spite of the terror underground;
And they bade him come and live again
In the light-bright haunts of living men,
And once more look the sun in the face,
And gladden in earth's beloved embrace,
But he looked at his young boy, dead or dying,
In the midst of the shattered fragments lying—
Dying or dead—but powerless to move
At the help of man, or the voice of Love,
And self lay dead where the child must die,
And he let deliverance pass him by;
He saw his duty set straight before
In the love that liveth for evermore,
And he put the proffered freedom behind,
With never a thought of self in mind;
And to life or to death run the trackless stream,
He stayed with him in the deep, black seam,
And to prayer and to warning one answer had,
A brave one,—"Nay, I'll stay with the lad."

"Nay, I'll stay with the lad,"
Down in the deep, black seam;
Once again was the story told,
Old as Honour, as Poesy old;
And the rugged miner, whose cares might be
Something unknown to you or to me,
Rather than leave his boy below,
Alone in the grip of the lurking foe,
Chose to die with him there and then,
Rather than live with his fellow-men;

Smoothed the pillow the child beneath,
Turned with him to the void of Death,
And to all mankind, in its strong self-love,
Taught the unself proclaimed above;
And whate'er his sin, and whate'er his sorrow,
Chose the night without early morrow,—
Went to his Maker straight and free,
And pleaded his plea courageously:
For his boy he lived, for his boy he died,
And the two together, side by side,
Before the divine, eternal Throne,
Had nothing to plead but their love alone.—
And there, perchance, from the answer to prove,
That the greatest wisdom of all is Love.
Self! be hushed while in places high,
The many pass thought of others by,—
Let others starve, and let others bear
The woes that beset us everywhere,—
So the great be but free from the curse of death,
So the great but gather the fruits of the earth,
So property flourish, and riches thrive,
And keep but the worldling's life alive,
What is it to them that these grave things be?
That these sights are given to who will see?
While wealth will prosper, denial dream,
Life's moral is told in the deep, black seam;
And angels rejoice in that answer glad,
And human,—"Nay, I'll stay with the lad."

A COUNTRY SCHOOL.

Pretty and pale and tired
She sits in her stiff-backed chair
While the blazing summer sun
Shines on her light brown hair,
And the tiny brook without,
That she hears through the open door
Mocks with its murmur cool
Hard bench and dusty floor.

It seems an endless round,—
Grammar and A. B. C.;
The blackboard and the sums;
The stupid geography;
When from teacher to little Jim
Not one of them cares a straw,
Whether "John" is in any "case,"
Or Kansas in Omaha.

But Jimmy's bare brown feet
Are aching to wade in the stream,
Where the trout to his luring bait
Shall leap with a quick bright gleam;
And the teacher's blue eyes stray
To the flowers on the desk hard by,
Till her thoughts have followed her eye
With a half unconscious sigh.

Her heart outruns the clock,
As she smells their faint sweet scent;
But when have time and heart
Their measure in unison blent?
For time will haste or lag,
Like your shadow on the grass,
That lingers far behind,
Or flies when you fain would pass.

Have patience, restless Jim,
The stream and the fish will wait;
And patience, tired blue eyes—
Down the winding road by the gate,
Under the willow shade,
Stands some one with fresher flowers;
So turn to your books again,
And keep love for the after hours.

—*Selected.*

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

NORTH WELLINGTON TEACHERS' ASSOCIATION.—The semi-annual meeting of the Teachers of North Wellington was held in the Central School, Arthur, on Thursday and Friday, the 14th and 15th October. There were about ninety teachers present from different sections of the division, and also several visitors interested in educational matters. The President, Mr Jos. Reid, B.A., Head Master of the Mount Forest High School, occupied the chair, and Mr. Wm. McEachern acted as Secretary. Mr. D. Clapp, B.A., Inspector of Schools for North Wellington, was present both days, and Mr. Groat, formerly Inspector in Middlesex, was in attendance on Thursday, and Mr. Craig, B.A., Insp. for South Wellington, on Friday. The programme of the meeting was as follows:—1. Appointment of committees; 2. Weights and Measures with class—Miss Campbell, Arthur P.S.; Critics, Messrs. Rae, Arnold and Clarke. 3. Our Education—John Greig, S.S. No. 12, Minto; Critics, Misses Mitchell, McIntyre, and Livingstone. 4. Use and Abuse of Text Books—Alex. Dickie, S.S. No. 14, Maryborough; Critics, Messrs. R. Perry, Dow and Corrigill. 5. General School Management.—Arch. McPherson, H. M. Arthur P.S.; Critics, Messrs. Ironside, Denton and Miss Lawson. 6. How to Teach Spelling—Peter McEachern, S S No. 8, Peel; Critics, Messrs. McLean, Stewart and Harper. 7. How to Teach Fractions—Jos. McPherson, H. M. Drayton, P.S. Critics—Messrs. McLean, Stewart and Harper. 8. An Essay—Henry Becker, S.S. No. 13, Peel. 9. Vacations and other changes in School Law—General discussion by Convention. 10. The Art of Questioning—James McGirr, H. M. Clifford P. S.; Critics, Messrs. McKenzie, Bingham and Bright. 11. Introduction of Mathematical Geography to advanced classes—J. H. Balderson, B.A., Mount Forest H.S.; Critics, The Convention. 12. The Study of History—J. P. Ogden, S. S. No. 6, Maryborough; Critics, Messrs. Bryans, Freure and John M. Cameron. 13. Corporal Punishment—Geo. A. Peters, S.S. No. 3, Arthur; Critics, Misses McNabb, Banks and Tuthill. The meeting was a complete success; the essays were well prepared and the criticisms pointed and marked by good feeling; and, as many of those who took part were young teachers, ample evidence was shown that they take an interest in their profession, by the knowledge they displayed of each subject debated. On Thursday evening, the 14th, a public entertainment was held in connection with the Association; and, although the evening was somewhat unfavourable on account of a shower of rain, the house was well filled. John Anderson, Esq., County Registrar, presided in his usual efficient and acceptable manner; and, after extending a cordial welcome te the teachers, spoke of the improvement made in our school system, and the qualifications of teachers during late years. After a piece of music by the choir, the Chairman introduced Dr. Yeomans, of Mount Forest, who delivered an interesting and instructive lecture on the "Mysteries of our Inner Life." The doctor held his audience spellbound for about an hour. The lecture was illustrated by diagrams, and this, together with a careful avoidance of technical terms, made it all the more interesting. Dr. Chisholm, of Arthur, formerly teacher in Fergus High School, next explained his method of teaching history, and showed that he is not only an historian and physician, but also a poet. The Chairman made suitable closing remarks; and after hearty votes of thanks had been presented to Dr. Yeomans for his lecture, to the choir and others who took part in the entertainment, and to the Chairman, the meeting was brought to a close. The next meeting of the Association will be held at Drayton, in May or June, 1881.

LEEDS.—District No. 2, Farmersville Teachers' Association, met Nov. 5 and 6. The forenoon of the first day was spent in the Model School, which is now in its second session, with twenty-three teachers in training. In the afternoon, in addition to routine work, &c., Dr. McLellan gave most valuable assistance, first in explaining Kindergarten methods of introductory teaching, and second, in Algebra. In the evening an eloquent lecture was delivered by the Doctor, on "National Education," it was well attended and well received The second day was mostly taken up with the reading and discussion of four well-written essays:—Dr. Law, Head Master of the Brockville High School, on Geology; Mr. Worrell, Head Master of the Gananoque High School, "On Trifles;" Mr. Bigg, I.P.S., Brockville, "Defects in our System of Education;" and Miss Katie Addison, "On Books." The *Canada School Journal* was adopted by the Association, to be paid out of the Association funds and furnished to members at club rates. The following were elected officers for 1881:—President, J. Rowat, Head Master Model School; Vice-President, Miss M. Kurley; Sec.-Treas., A. Bowerman, Head Master High School; Directors, Messrs. Johnston, Eaton and Eyre, and Misses Fulton, Kincaid and Giles.

FRONTENAC.—The Convention of this Association was held in the County Court House, Kingston, on the 28th and 29th October. The membership was principally represented by lady teachers. In the absence of Prof. Dupuis, President, the chair was occupied by Mr. John Agnew, M.D., Vice-President, who formally opened the meeting. He said that no business was transacted in the forenoon in consequence of the non-attendance of the members, but he hoped to see more interest taken in the affairs of the Association on future occasions. The minutes were read by Mr. Henstridge, Secretary, and adopted.

Mr. Bole, as delegate to the Provincial Association, gave some interesting details of the proceedings of that body, chiefly regarding the arrangements respecting teachers' expenses and the superannuation scheme. A

lively debate on these matters was maintained by Mr. McIntyre, Mr. Henstridge and Mr. Bole, resulting in the opinion that as regards superannuation, it was only equitable to have those subscribe who would be most benefited, namely, the teachers, both male and female, and the balance of what would be necessary in each case of superannuation should be given out of the Government treasury. It would be degrading to teachers to ask it from the school sections, which had paid them during their services to improve society; and the State, which received the advantage, should show its gratitude by providing for its antiquated faithful servants.

Mr. Bamford read a well-written paper on "A Visit to Mr. Alcott's School, Boston," dwelling mainly on the moral discipline exercised therein.

Mr. Henstridge took up "Addition and Subtraction of Fractions," the groundwork of which is so frequently neglected in schools, showing his plan of teaching it intelligently. This subject gave rise to an animated discussion, joined in by Messrs. Bole and McIntyre.

Mr. McIntyre afterwards read an essay on "Discipline," representing the school as a monarchy on a small scale, and he would accordingly devise rules and regulations for its government and well-being. He thought a good system of short drill essential, and highly recommended Mr. Hughes' work on the subject. He condemned the use of the lash except under extreme circumstances.

In the evening a lecture on "The Minute Structure of Plants and Animals" was given by Professor Dupuis, in the lecture-room of the new college, to the teachers and their friends. By means of the oxy-hydrogen lantern he exhibited some magnificent microscopic views—chiefly photographs taken by himself—of the wonderful objects in the mineral, vegetable and animal worlds, describing each with admirable fluency and precision. At the conclusion, the talented lecturer was highly complimented by the Rev. Principal Grant, who also addressed the teachers on the noble nature of their work, exhorting them to aim high in training their pupils to ascend to the upper branches of learning and philosophy, for "In philosophy there is nothing great but man; in man there is nothing great but mind." Prof. Fowler and Mr. Walkem expressed their great satisfaction at having heard such an excellent lecture, and spoke to the teachers on the nature and importance of their duties. Mr. Henstridge proposed, and Dr. Agnew, I P.S., seconded a vote of thanks to Prof. Dupuis, which was carried unanimously, and the meeting separated. *Second Day* —Mr. Lyons read a paper on School Management. He observed that pupils have certain rights as well as teachers, which should be respected. Dr. Agnew, I.P.S., answered questions respecting daily prayer, class registers, teachers' authority, etc., after which Mr. Henstridge gave a lucid explanation of working problems in stocks. Mr. McIntyre gave answers to questions on Discipline, and How to Teach Grammar and Geography to Beginners. In the afternoon Miss Woollard read an excellent essay on Success in Teaching, which was greatly appreciated. Mr. A. P. Knight read an entertaining paper on Physical Geography, relating principally to glaciers, which he illustrated by diagrams. This exercise concluded the Convention.

WELLAND —The teachers of this Association held their annual meeting at Clifton on the 22nd and 23rd October. There was a good attendance notwithstanding the unfavorableness of the weather, and a sharp interest was evinced in the several subjects brought forward. After a few preliminary remarks from Mr. A. McCulloch, M.A., H. M. of Thorold High School, president, the minutes of previous meeting were read and confirmed. Prof. Witmer, of Eggetsville, U.S, read a paper on Phonetic Spelling, which he illustrated on the blackboard. The subject was the patient investigation of several years during which he visited many places in the U.S. and Canada, and he derived much intelligent assistance from the teachers of the Dominion. His aim was to introduce as few innovations as possible, and by his system he hoped to make spelling an easy task for children, who would rapidly advance on the "royal road" by its aid. After some discussion, Mr. Dunlop proposed a vote of thanks to the Professor, which was seconded by Mr. Phillips, and carried unanimously. In the afternoon, the first business transacted was the election of officers. On the motion of Mr. Smith, the President was re-elected by ballot, and on the propssition of Mr. Morris, Messrs. Dobbie, Simpson, and Smith were appointed a committee to nominate the other officers, except Vice-President. Mr. W. B. Morris was elected to this office by open vote, on the motion of Mr. Dobbie, seconded by Mr. Simpson; and the other offices were filled, on the recommendation of the committee, as follows:— Sec.-Treas, Mr. W. A. Phillips; Auditors, Messrs. Dobbie and Dunlop; Executive Committee, Miss Henderson, Messrs. Fry, Robertson, Cornforth, and Stephenson—added to old committee. Next place of meeting to be in Welland, the time to be determined by the ex-committee. A paper on the "Use and Abuse of History" was then read by Mr. Stephenson; it created a lengthy discussion, in which Rev. J. Gordon, M.A., Messrs. Morris, Dunlop, Cornforth, Dobbie, Smith, and others, participated with much spirit and ability. On the motion of Mr. Dunlop, the cordial thanks of the meeting were tendered to Mr. Stephenson, and also it was decided to ask the publishers of the CANADA SCHOOL JOURNAL to give the essay a place in its columns. The auditors presented their report, which was adopted. *Second Day* —Mr. W. A. Phillips gave an interesting and practical exemplification of his manner of teaching Writing in the Public Schools; and from the beautiful illustrations he gave on the blackboard, it was evident the subject was in excellent hands. Mr. McCulloch, M.A., took up English Grammar, dealing principally with adverbial objectives and participles, which he handled with great ability and perspicuity. Mr. W. B. Morris read a highly instructive paper on English Literature, which gave rise to an animated discussion. The meeting then adjourned.

NORTHUMBERLAND TEACHERS' ASSOCIATION.—A most successful meeting of this Association was held at Cobourg, on Oct. 28th and 29th. Mr. W. C. Sprague gave a useful and practical address in illustration of his mode of teaching History on the Topic Method. In teaching English History for the first time, he would teach but a single event at a time, or, if closely connected, might give two, not exceeding that limit. He did not think dates of opening or closing of each reign important. Every teacher should read at least one large work of authority every time he needed to revise each period. A large field of reading was necessary to enable a teacher to present a proper view of his subject to advanced classes. Mr. MacHenry and Mr. Scarlett, I.P.S., supported Mr. Sprague's views. Edith Thompson's British History was condemned as a most inferior text-book. Mr. J. McGrath also spoke on the subject of History, and advised the use of written exercises. Mr. J. Swift criticized recent school legislation with reference to examination of Second and Third-Class Teachers The general opinion of this, and the following speakers, was strongly against the permissive claim for shortening the summer holidays. Mr. W. S. Ellis, B.A., spoke on Geometry, advocating the use of wise diagrams in teaching the first few propositions of Euclid. On Friday, the committee on nomination recommended the following as officers for 1881: President, D. C. McHenry, M.A.; Vice-President, Samuel Dixon; Secretary-Treasurer, D. E. Stephenson; Management Committee, W. J. Black, R. R. Orr, B.A., M. Gormley, F. Tait and W. E. Sprague. Mr. Cross gave a lesson of much interest to a junior class in the First Book; being followed by Mr. Inspector Scarlett, who took up elementary arithmetic with the same class. Mr. Sprague, H. M. Model School, spoke on the subject of Practical Teaching. After an exercise on Reading by Miss Gormley, the following resolutions were passed: 1. Against the permissive claim for shortening the midsummer vacation; 2. That candidates for First, Second, and Intermediate, who have passed in a majority of the subjects, should not in future be re-examined in those subjects. Mr. D. C. McHenry gave an interesting address on English Composition, and drew attention to the present improved methods of study—the use of the *literature itself* instead of mere manuals, such as that of Collier's. He dwelt on the object of this study, and the best method of teaching it, illustrating his position by an analysis of the collected studies needed to a thorough study of Addison's "Sir Roger." Mr. Scarlett then delivered a lecture on English Literature, which formed a valuable contribution to this most successful meeting.

SOUTH SIMCOE.—On the 4th and 5th ult., the members of this Association assembled in convention in the Public School, Alliston, under the presidency of the Rev. W. McKee, B.A., who opened the proceedings at 9 a.m. on the first day, with a brief address, after which the minutes of last meeting were read by Mr. W. Neilly, and adopted. Mr. G. W. Ross, M.P., who, on being introduced, was very cordially received, gave a highy instructive exemplification of the manner of teaching reading. He pointed out the mistakes that are made by children, which are frequently passed over and allowed to grow by the teacher, especially those comprehended under modulation and clear utterance.

In the afternoon, Mr. J. McFaul, H. M. of Lindsay Model School, gave an exposition of the principles of "Drawing," and showed how they might, in part, be taught to children without much difficulty, by an intelligent teacher. The subject being new and interesting, Mr. McFaul was requested to give a more practical illustration of it next day, when the attendance would be more numerous, to which he willingly acceded.

Mr. Ross then took up "School Management," giving the teachers some excellent practical hints bearing on order, discipline, cleanliness, ventilation, &c., which were greatly appreciated.

In the evening a meeting was held in the Presbyterian Church, which was well filled with the teachers and their friends. The chair was occupied by the Rev. W. McKee, B.A., president, and a select choir was in attendance. Miss McIntosh presided at the organ. After the anthem, "Oh, praise the Lord," Dr. Forest, H. M. of Bradford High School, gave a reading entitled "The Combat," with ability and expression. The chairman then introduced Mr. G. W. Ross, who gave a splendid address on "Intellectual Forces," which elicited frequent marks of admiration and satisfaction. On its conclusion a vote of thanks to the speaker was proposed by the Rev. Mr. Burnett, seconded by the Rev. Mr. Breden, and carried by rising vote. Dr. Forest moved a vote of thanks to the trustees of the church for their kindness in giving the use of the building; it was seconded by Mr. Henderson and carried. The choir gave a sweet rendering of the hymn "On to Victory," and the proceedings terminated.

Second day.—In the unavoidable absence of the president, the chair was taken by Mr. F. Wood, vice-president, at 9 a.m. Mr. J. McFaul continued his method of teaching "Drawing" in public schools. Beginning with lines he went on to figures, and then illustrated the principles of easy perspective. Many of the teachers used their note-books as drawing sheets, and followed the instructions so clearly given with perfect

ease, showing the superiority of Mr. McFaul's method of teaching this graceful art. A lengthened discussion, joined in by Dr. Forest, Messrs. Parker, Rankin and McNeilly, ended in the conclusion that the art should be taught generally in the public schools.

Dr. Forest exemplified his method of teaching "Grammatical Analysis" to young children. A 3rd class from the public school was in attendance, and Dr. Forest succeeded in making the little ones thoroughly understand the rather difficult subject by his simple and practical manner of teaching it. Mr. Parker read an admirable paper on "Literature." He stated that teachers generally read less compared with members of other professions, and he strongly urged them to store their minds with pure literature, on Bacon's idea that "reading makes a full man." He recommended the use of good, sound periodicals, as the cheapest form of useful reading that could be procured.

Miss Springer, of the Model School, Bradford, read a well-composed and eminently practical essay on "Moral Training," for which she received the thanks of the Association. A vote of thanks was also, on the motion of Mr. Rankin, passed unanimously to Mr. Parker for his paper. It was decided to hold the next meeting at Bradford, and the convention concluded.

HALIBURTON.—The third semi-annual meeting of the country of Haliburton Teachers' Association was held in the village of Minden on the 8th and 9th Oct. This meeting was the most successful yet held. The work was as follows: Arithmetic, 3rd Class Paper, July, 1880, E. J. Unger; Essay on Incentives to Studious Habits, Mr. G. S. V. Houston; Factors and Multiples, Mr. W. Leith. On Friday evening a most successful session was held. On Saturday, Dr. Curry gave a very useful lecture on the Modern Application of Electricity. The next work was 3rd class Algebra paper of July last, by Miss Nellie Unger; Chemistry, by Mr. E. C. Young; and an admirable Essay on Management of Young Children, by Miss Colman, closed the work of the meeting. The officers for the coming year are: President—Dr. Curry, I.P.S., Co. Haliburton. Vice-President—W. Leith, Esq.; Secretary—Mr. E. S. Young; Committee—Mrs. Coleman, Miss N. Unger, Mr. Houston, and Mr. J. W. Watson. Next meeting will be held in the village of Haliburton, in February, 1881. E. J. UNGER, Retiring Secretary.

LONDON CITY TEACHERS' ASSOCIATION.—This meeting took place on Oct. 19. During the morning services, Mr. Woodburne's excellent paper on Mistakes in Teaching was followed by a spirited but in some respects irrelevant discussion on the Usefulness of Model Schools. Mr. Farmer then gave an essay on The Study of Classics, in which he stated that ignorance was the main objection to this study. Its value consisted, it is true, more in the preparation of the soil than in sowing the seed. As mental discipline such training was invaluable. In the afternoon session, after an address on Object Lessons by Mr. Boyle, Mr. D. C. Stewart and Mr. Houston urged the necessity of teaching Fractions before the Compound Rules. A committee was then chosen to arrange for the formation of a Western Ontario Teachers' Association. The following new appointments were made: President—A. C. Starrs; Vice-President—Mr. Crackley; Secretary and Treasurer—D. E. M. Stuart; Librarian Committee—Messrs. Farmer, Whittington, Hotson and Miss Coyne; Auditors—Messrs. Woodburne and Carson. The election over, the meeting adjourned to assemble again on the last Friday and Saturday in May.

REVIEWS.

LOVELL'S ADVANCED GEOGRAPHY. *John Lovell & Son, Montreal; 1880.* This handsome volume is a sequel to the excellent Intermediate Geography by the same author. It is intended to replace the "General Geography," by Dr. J. G. Hodgins, the many changes that had taken place in Canada and the world since the publication of which rendered a new work on the subject necessary. The book produced by Mr. Lovell is well adapted to the needs of the most advanced student, and of teachers who require a greater quantity and variety of information than is necessary for their schools. Mr. Lovell's book gives a great deal of space to statistics, physical geography, and social and scientific notes on the various countries; so much so, that the book has a value as a work of reference for all literary students and men of letters. The maps are admirable for finish and accuracy, and contain a minute view of the *locale* in every instance in which we have examined it. This is a marked advance on the cartography of any former book we have seen, including the Intermediate Geography by the same writer. The maps are supplemented by a copious supply of engravings illustrating the town and country, the arts, chief buildings, and social life of the different countries. Some of these pictures have much artistic merit. Altogether the book is one of first-class merit for accuracy, variety, and finish. We are justified in stating that no school manual we have seen on the subject of geography, whether published here or in England, is anything like as well executed. It ought to be in the hands of every teacher who has the ambition of teaching geography fully and practically.

THE WELCOME CHORUS.—*A Singing Book for High Schools and Seminaries. By W. S. Tilden. Published by Oliver Ditson & Co.*—The Welcome Chorus commences with a sort of *High* Elementary Course, which is followed by quite a large division containing sacred music for opening and closing exercises, and for practice. After this the rest of the book (or 150 pages) is filled with new and appropriate glees, or part-songs, arranged in four parts. It is understood that beginners may all sing one part, that is, the air; afterward, as they become more competent, they may try two parts, or three, or four. Meanwhile the four parts played in harmony make an excellent accompaniment to the singing, whether it is in one or more parts.

ORION AND OTHER POEMS.—*By C. G. D. Roberts, B.A., Philadelphia. J. B. Lippincott & Co. 1880.*—There has been of late a marked advance in Canadian literature evidenced by the increased number of really valuable books produced in the Dominion. Of these as is always the case, good poetry, as distinguished from mere verse, is the rarest. Mr. Roberts has produced a volume of original lyric poetry which would do credit to the literature of any nation; its practical form, and the matter therein, are entirely free from any echo of other poets. Some of these hymns appear in *Scribner* for the present year. Mr. Roberts is head master of the High School at Chatham, N.B. He is a graduate of the Fredericton University, and grandson of the late Mr. Roberts, for many years principal of the Fredericton Grammar School in connection with the University. The teaching profession has reason to be proud of Mr. Roberts as a poet.

THE NORTH AMERICAN REVIEW for November has been received from *D. Appleton & Co., New York.* It contains:

I.—The Monarchical Principle in our Constitution.
II.—The Advantages of Free Religious Discussion.
III.—The Republican Party as it Was and Is.
IV.—The Ruins of Central America.
V.—The Nicaragua Route to the Pacific.
VI.—The Coming Revision of the Bible.
VII.—Recent European Publications.
VIII.—The Political Situation from a Financial Standpoint.

From *Strachan & Co.*, 34 Paternoster Row, London, the November number of THE CONTEMPORARY REVIEW has been received. It contains the following articles:

1. Animal Instinct and its Relation to the Mind of Man.
2. How to Nationalize the Land.
3. The Relation of Christian Belief to National Life.
4. Party Politics in the United States.
5. The Procedure of Deliberative Bodies.
6. Home Rule in Ireland.
7. The Prospects of Londoners.
8. The Future of the Canadian Dominion.
9. Old and New Japan; or, a Decade of Japanese Progress.
10. Contemporary Books:—
    I.—Biblical Literature.
    II.—Classical Literature.

We also acknowledge the receipt of THE BRITISH QUARTERLY REVIEW for October, from the *Leonard Scott Publishing Co.*, 41 Barclay St., New York. Its contents are as follows:—

I.—Tennyson's Poems.
II.—The Lord's Supper Historically Considered.
III.—The Art of Singing, Past and Present
IV.—A Dutchman of South Africa.
V.—Latham on Examinations.
VI.—Sir James Outram.
VII.—Exploration and Mission Work in Africa.
VIII.—The Practice of an Architect.
IX.—Lord Northbrook and Lord Lytton.
X.—Contemporary Literature.

MAGAZINES.

HARPER'S MAGAZINE, December.—This is a very fine number, containing the regular supply of beautifully illustrated articles, and more than the usual quantity of matter interesting to Canadians and teachers. "English Lakes and their Genii" has portraits of the "Lake Poets," tales relating to them and the local characters they have made immortal, and pictures of the most beautiful scenery in England. "Recent Movements in Woman's Education" is a capital article, and "The Queen, Ministry, Lords and Commons" explains the relations of the governing powers in England fairly and fully.

APPLETON'S JOURNAL.—This number sustains the reputation of this magazine as a storehouse of instructive and attractive reading. Perhaps the best articles are one on "Memory," by A. J. Faust, and "The Literature of the Victorian Reign," by Justin McCarthy. The editor ably replies to Grant White's criticisms of Public Schools.

OUR LITTLE ONES.—It must often seem a mystery to those who reflect on the subject, that so many magazines should be published especially for children, and apparently regardless of cost. It is a good indication of the educational awakening which has directed special attention to the importance of improving the very early years of childhood. OUR LITTLE ONES is a new claimant for the favor of the young folks, published in Boston by the Russell Pub. Co., 149 Tremont street, and edited by "Oliver Optic." It is a valuable addition to juvenile literature. It aims to instruct as well as amuse, and its illustrations are remarkably well executed and very attractive to children. We wish it success.

HOW NOT TO AROUSE AN INTEREST.

1. Have nothing prepared beforehand.
2. Ask the questions of the text-book, and be sure that the answers are given in the words of the author.
3. Always have a book in your hand, and prompt the pupil if he forgets.
4. Have no exercises at which all can be employed at the same time.
5. Make no use of your black board.
6. Prepare a long list of rules, and present them the first day.
7. Have no programme.

HOW TO AROUSE AN INTEREST.

1. Be cheerful, earnest, interested.
2. Prepare each day's work carefully; by so doing you will be fresh on each topic, and can direct your pupils to the best advantage.
3. Have a programme for the school, and *work* by it.
4. Make free use of your black board.
5. Have pupils prepare written lessons. Have them outline topics and report in their own words upon the subject-matter. Discard memorizing of *any* author's words.
6. Select some general exercise each day for the whole school. Music, concert, drills in reading or gymnastic exercises.

Official Department.

REGULATIONS RESPECTING THE CENTRAL COMMITTEE OF EXAMINERS.

1. The questions in the different subjects prescribed for the non-professional examination of candidates for public school teachers' certificates of all classes, and at the High School Intermediate examination, shall be prepared by the Central Committee of Examiners, who are to be appointed after the end of the current year as provided in these regulations.

2. Such Committee shall consist of a Chairman and six other members appointed by the Education Department. The chairman shall hold office during pleasure, and the other members for the period of three years respectively, two of such examiners retiring in rotation on the first day of January in each year; and for establishing such system of rotation of the members of such committee, two shall now be appointed for three years, two for two years and two for one year. Any retiring examiner shall not be eligible to be re-appointed until after an interval of at least one year from the expiration of his former appointment.

3. The chairman shall have the supervision of such committee in the discharge of their duties and in the preparation of questions in each department of study. The Committee shall, as soon as practicable after their appointment, and thereafter before the 15th day of September in each year, prepare a scheme and submit it for the approval of the Minister of Education, in order that full information may be given to candidates of the kind of examination they will be expected to undergo in each subject. The questions shall be governed by such a standard as will elicit the possession by the Candidate of fair average knowledge in each subject, having regard to the object of each examination. The questions on each subject are to be framed by the examiners solely to ascertain whether the candidate has acquired a fair knowledge of each subject, and so is qualified or not for the upper school in the case of the High School Intermediate Examination, or for non-professional standing as a Public School Teacher of the third, second, or first class as the case may be. It is not intended that at any of the examinations comparative merits of individual candidates amongst themselves should be ascertained.

4 The questions on each subject shall be set by two of the Examiners and approved of by the Committee.

5. The examination of the answers to the questions shall be under the supervision of the Committee of Examiners with the assistance of such number of sub-examiners from time to time as may be neeessary, who will be appointed by the Education Department.

6. The Committee shall examine and report upon such appeals from Candidates at any of the foregoing examinations as may be referred to them by the Minister of Education.

7. The High School Inspectors shall be the Examiners for preparing questions for the examination of pupils for admission to the High Schools from time to time; and all appeals to the Department from unsuccessful candidates at such examinations shall be disposed of by the High School Inspectors.

8. The High School Inspectors shall, with the Chairman of the Central Committee of Examiners, discharge the duties connected with the professional examination of Normal School students, as well as of the inspection of Normal Schools as prescribed by the regulations in that behalf.

The foregoing will come into force on the first day of January next, except as to High School Entrance Examinations, as to which they will take effect at once.

(Signed), ADAM CROOKS,
Minister of Education.

EDUCATION DEPARTMENT, ONT.,
Toronto, 10th November, 1880.

Approved by order of the Lieutenant-Governor in Council on the 25th day of November, 1880.

Publishers' Department.

We are compelled, through overflow of matter, to hold over until next issue, reports of some Conventions held last month. In most of the Teachers' Associations the CANADA SCHOOL JOURNAL appears to be a *favorite periodical*, judging from the fact that quite a number of them have adopted it as their Educational organ. We have no doubt but that before long no teacher will consider himself suitably equipped for work unless he possesses this valuable and important "aid." Teachers, look out for the JOURNAL in 1881! New and attractive features! Matter fresh and lively! Powerfnl Educational Essays! Full sets of question papers on every required subject! Local and foreign school and college topics! Teachers will have a special advantage now by adopting the much approved club system.

We would draw attention to the expiration of the subscriptions of a number of our readers this month, and as we are fully prepared to give them splendid value in next year's JOURNAL, we hope they will not alone renew their own subscriptions, but will use their influence with their friends and neighbors in obtaining many more subscribers.

—In imparting sound commercial principles, higher business culture and generally promoting the best interests of young men, the president of the British American Business College, in this city, has done much. In order to stimulate the students to greater exertion and more perfection, we notice that he has offered for competition handsomely engraved gold and silver medals. These will be awarded in the Spring to the students who have shown the greatest proficiciency in penmanship and the science of accounts. The President of the Institute of Actuaries and Adjusters of Canada, who is recognized as the highest authority in this country, will decide upon whom the honors shall be conferred.

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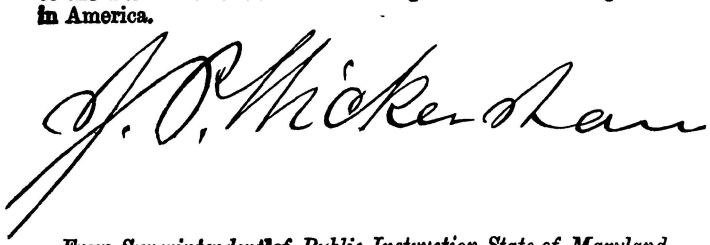

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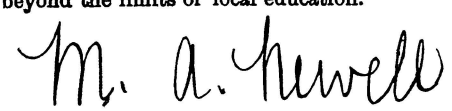

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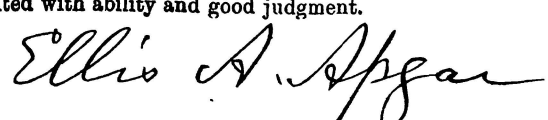

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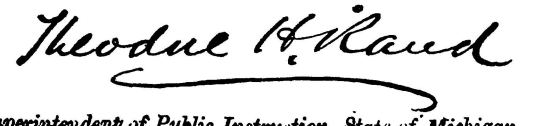

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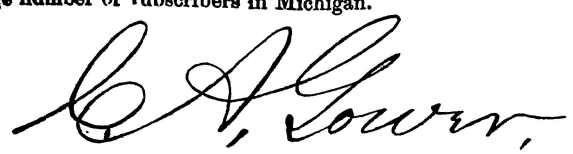

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The CANADA SCHOOL JOURNAL has been coming to my office regularly, and is placed on permanent fyle. I find it a very excellent journal, both as to its mechanical execution and the character of its editorials and contributions. Its subscription price is very small. I commend it to all educators with whom my opinions on such matters may have weight.

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I am very much pleased with the CANADA SCHOOL JOURNAL. It is ably edited; and with its valuable contributions and well chosen selections, it furnishes so much that is of use to every teacher, that I am not surprised to learn that it has a large and growing list of subscribers. The copy sent me is No. 30. Am I asking too much in requesting you to send me the back Nos. of Vol. iv, so that beginning with Vol. iv, I may have a complete fyle?

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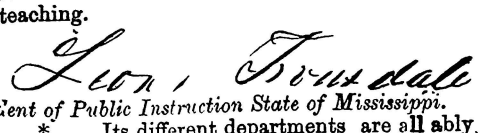

From Superintendent of Public Instruction State of Mississippi.

* * * * Its different departments are all ably conducted, and of educators, as well as others cannot but be interested and instructed by reading it. Accept my thanks for your proposition to send it to this office regularly.

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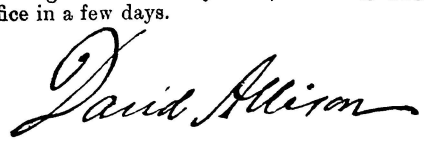

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